

2023



r*•*TCTM
INSTALLER MANUAL 5.0

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Laguna Industries® Limited Warranty

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This Limited Warranty may not be transferred or assigned and only applies to, and is for the benefit of, the original purchaser of new equipment. No amendment, modification, extension, renewal, or other change to the terms of this Limited Warranty may be made, or shall bind Laguna Industries or its authorized Distributors, unless done in writing and signed by a duly authorized officer of Laguna Industries.

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Welcome

CONGRATULATIONS ON YOUR SELECTION OF THE LAGUNA **r-TC™**

Introduction

This document provides a functional description of the Laguna Industries r-TC Tunnel Controller.

General Description

The r-TC is used to control the wash equipment in a tunnel car wash. Various sensors and input switches are used to detect the size and position of a vehicle entering the car wash. The r-TC will activate the various pieces of car wash equipment by turning relays on and off as the vehicle progresses through the car wash.

r-TC's Web Interface

The r-TC hosts a Web Interface used to allow remote computers to connect to the r-TC and monitor or configure the car wash. All configurable aspects of the car wash are accessible through the r-TC's Web Interface.

A car wash will typically offer different levels of car washing services to their clients. The web interface allows these different car wash packages to be built up and configured.

Touchscreen

The r-TC includes a touch screen monitor on the front panel of the cabinet. The touch screen displays statistics, alerts, and general information. Diagnostic tools are also accessible through the touch screen.

Unpacking and Initial Setup

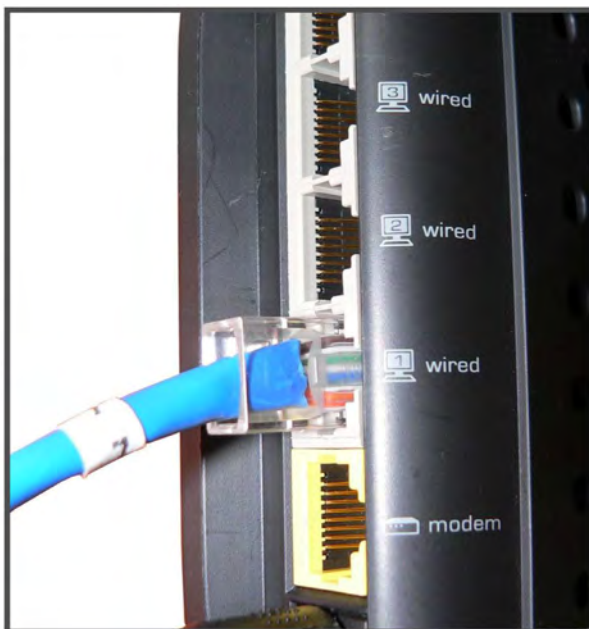
Installing The Wireless Network

We have uninstalled the wireless router to avoid antenna damage/breakage during transport. Please re-install the wireless router on location.

1. Remove both screws from the router's mounting bracket and start inserting the antennas through the holes with rubber grommets.
2. Push the router all the way up until its mounting bracket reaches (touches) the top.

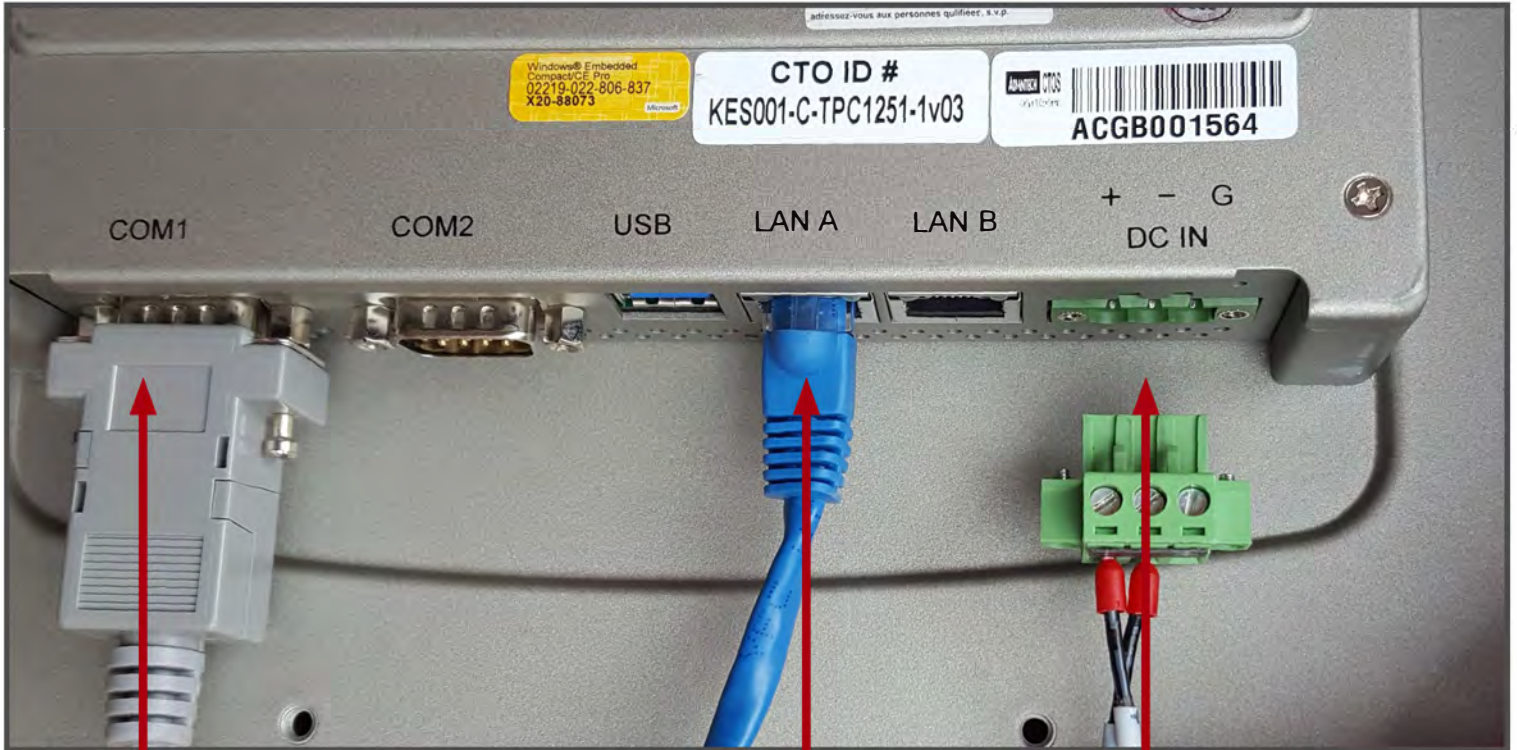


3. Fasten the router from outside using both mounting screws.
4. Plug in communication cable into **'Wired'** port and the power supply connector into **'Power'** receptacle.



Unpacking and Initial Setup

6. Connect **power**, **COM1** and **Ethernet** to the Advantech touchscreen.

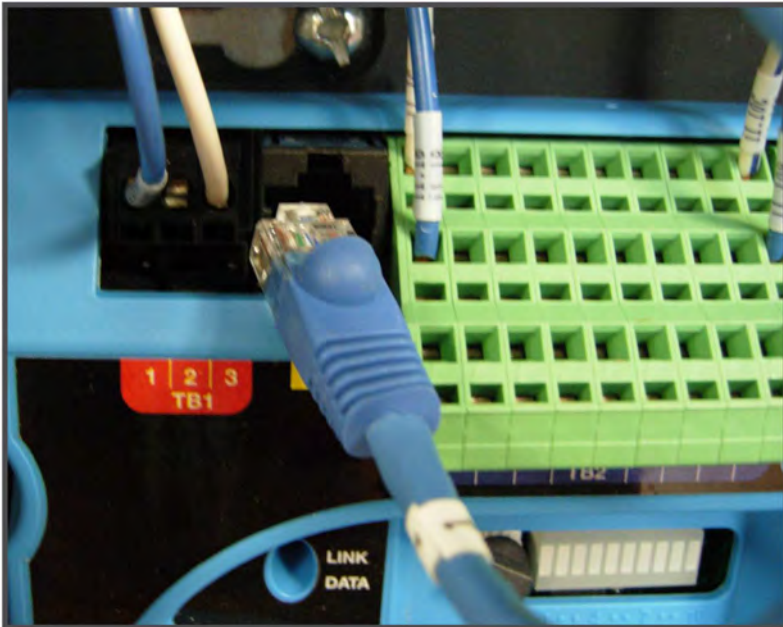


COM1

ETHERNET

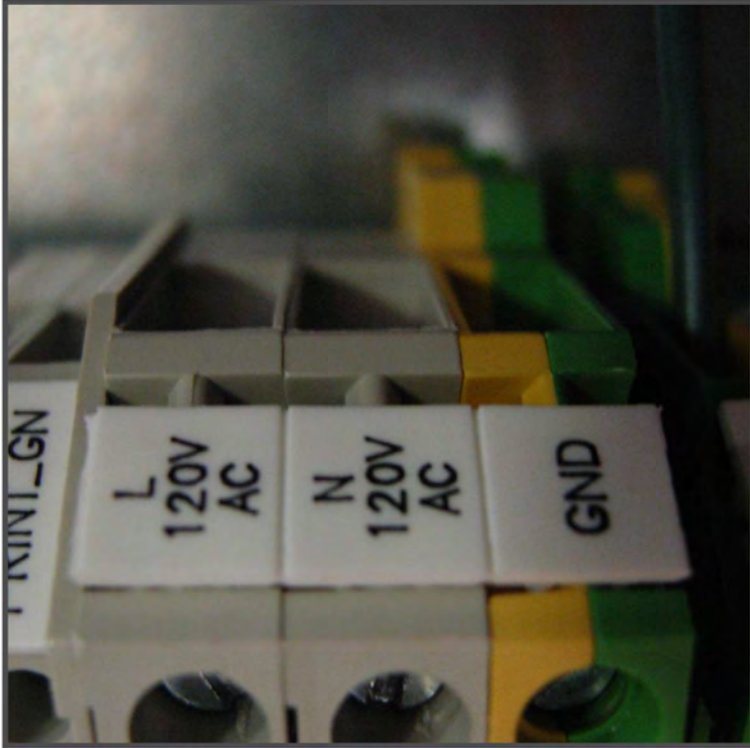
POWER SUPPLY

7. Connect **Ethernet** to IO Nodes



Unpacking and Initial Setup

8. Connect **120VAC** to **Panel**.

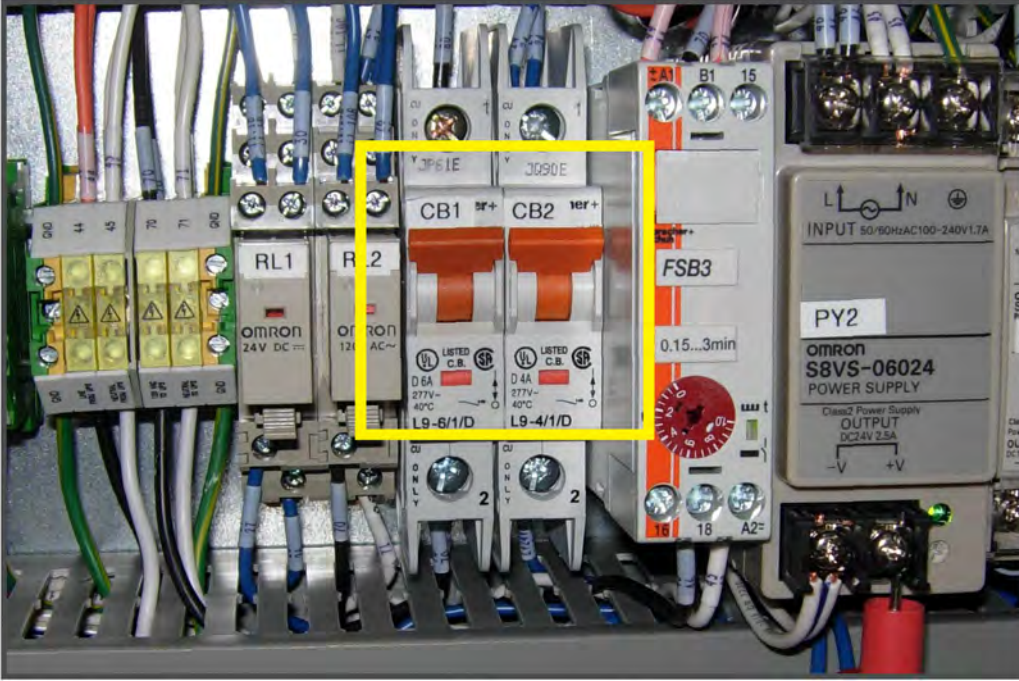


9. Connect **power plug** to **'Battery, Surge and Noise Protected Outlet'**.



Unpacking and Initial Setup

10. Turn on **Circuit Breakers**.



11. Turn on the r-TC's main switch.



Unpacking and Initial Setup

12. Press the **Power On** button on the **UPS** for a quick second, the r-TC should power on. **You have completed the setup.**



Getting Started

Connecting to the r-TC Web Interface

The r-TC hosts a web interface used to allow remote computers to connect to the r-TC and monitor or configure the car wash. The r-TC can be connected to the internet so that you can access your car wash from anywhere in the world. We will talk about connecting the r-TC to the internet later in this manual, for now let's concentrate on connecting locally to the r-TC's web interface.

Wireless Connection

The r-TC comes equipped with a wireless router.

SSID: Laguna Industries r-TC

Deault Password: 8DD4B89168

Once you have connected successfully to the r-TC wireless network, type in the r-TC's IP address into the address box of your web browser. The address of the r-TC's web browser is **192.168.1.80**.



At this point you should be prompted for a user name and password. If you have not yet set up your user accounts, you can begin by using the default administrator account.



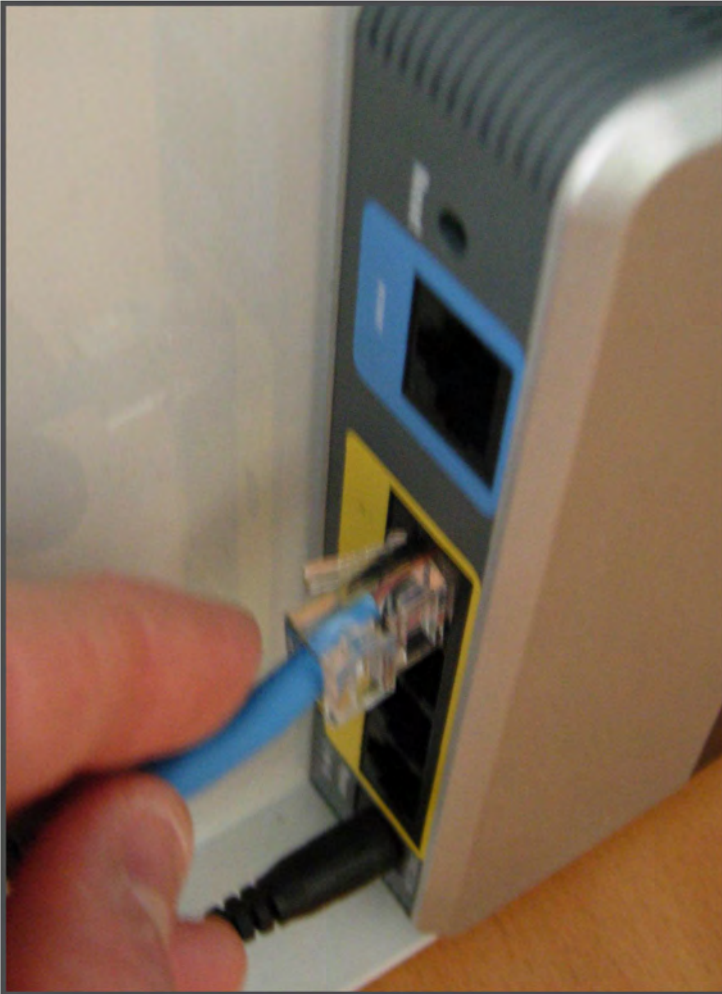
USERNAME = rtcadmin
PASSWORD = 12345678

We strongly recommend that you immediately change the administrator password (See **Page 18** for more details). Logging in successfully will bring you to the r-TC's home page (See full details of the r-TC's Home Page on **Page 17**).

Getting Started

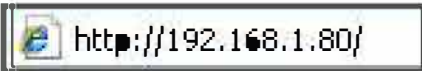
Direct Connection

In order to connect directly to the r-TC you will need an ethernet cable. Connect one end of the cable to the ethernet connection on your computer.



Connect the other end to one of the yellow ethernet connections on the router of the r-TC.

Type in the r-TC's web interface IP address into the address box of your web browser. The address of the r-TC's web browser is **192.168.1.80**.



At this point you should be prompted for a user name and password. If you have not yet set up your user accounts, you can begin by using the default administrator account.

rtcadmin
.....
Sign In

USERNAME = rtcadmin
PASSWORD = 12345678

Getting Started

r-TC's Homepage

After successfully signing into the r-TC you will be brought to the homepage of the r-TC's web interface. This page will give you a quick summary of the status of your r-TC including **current alerts** and the day's **wash counters**.

r-TC Web Interface | V4.02

r-TC™

Current Alerts

Power Failure
NIP30 Board Not Responding: 192.168.1.81

Wash Counters

Wash Package	Today's Total
Wash 5	0
Default	0
Cars Washed	0
Length Violations	0

Current Alerts: Status of the car wash. Any errors, active overrides or alerts will be visible.

***Note:** Active alerts with support documentation can be clicked to open support document.

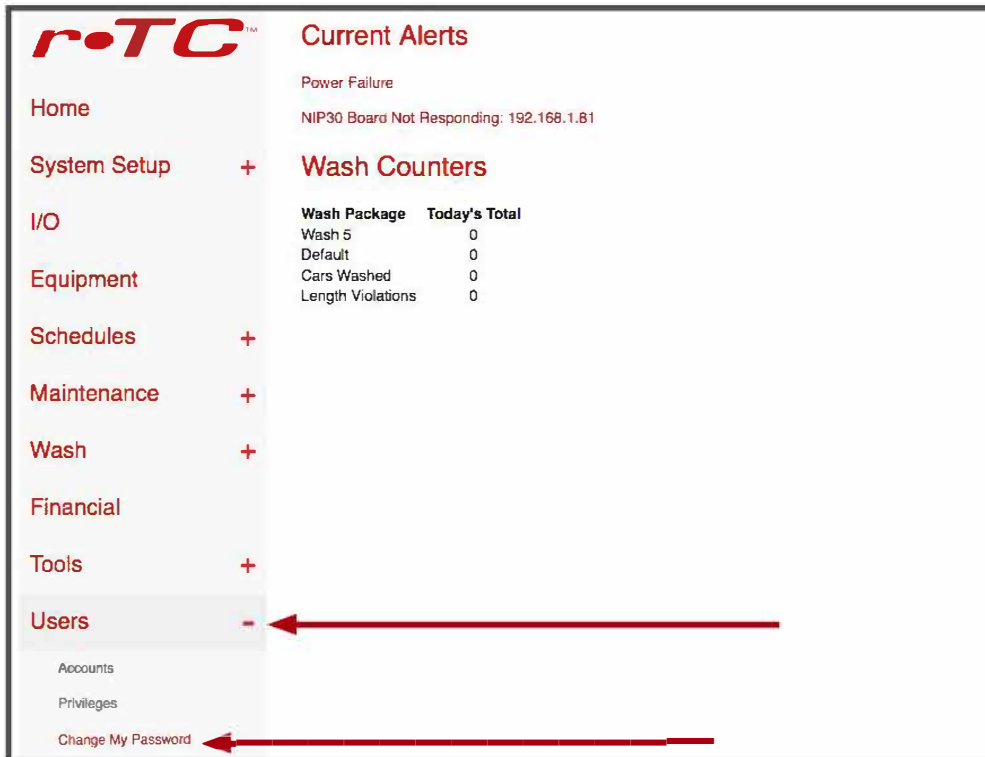
User Accounts

There are five types of user accounts.

- **Admin:** The only user who has access to all web pages at all user type levels.
- **Owner:** Has access to the web pages used to create and change wash packages, diagnostic tools and statistics. The owner can create and delete user accounts.
- **Manager:** Has access to the web pages used to create and change wash packages, diagnostic tools and statistics.
- **Tech:** Has access to advanced functions that are used to setup the car wash equipment and installation. Does not have access to the Financial web pages.
- **Guest:** A guest account does not require a password and applies only to the touchscreen.

Changing a Password

In order to change your password, you must first select the **'Users'** link on the homepage and click on **'Change My Password'**.



The screenshot shows the r-OTC web interface. On the left is a navigation menu with the following items: Home, System Setup (+), I/O, Equipment, Schedules (+), Maintenance (+), Wash (+), Financial, Tools (+), Users (-), Accounts, Privileges, and Change My Password. A red arrow points to the 'Users' link, and another red arrow points to the 'Change My Password' link. The main content area displays 'Current Alerts' with a message: 'Power Failure NIP30 Board Not Responding: 192.168.1.81'. Below this is a 'Wash Counters' table:

Wash Package	Today's Total
Wash 5	0
Default	0
Cars Washed	0
Length Violations	0

Enter your new password in the appropriate box, verify again and press **'Submit'**. Your new password is saved, and you will be brought back to the **'Users'** page.



The screenshot shows a password change form with the following elements:

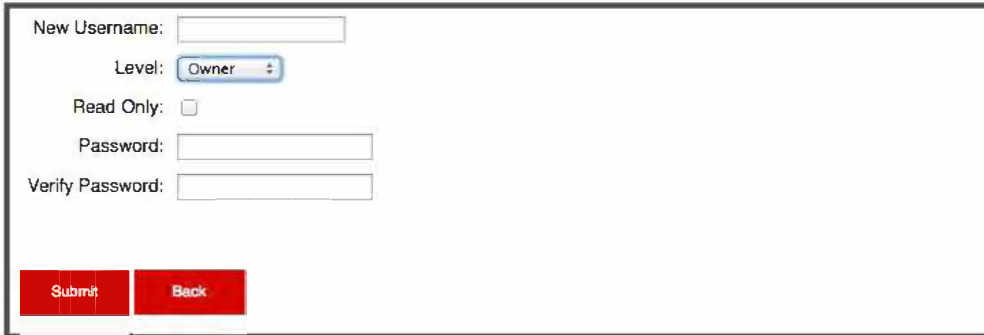
- A note: "Minimum eight characters."
- A "Password:" label followed by an input field.
- A "Verify Password:" label followed by an input field.
- A red "Submit" button.

Creating a New User Account

In order to create a new user account, you must first select the **'Users'** link and click on **'Accounts'** . Once you have the Current Users page open, you can click on **'Add'**.



The screenshot shows a box titled "Current Users" in red text. Below the title, the text "rtadmin" and "Tester" is displayed. At the bottom of the box, there are two red buttons: "Add" and "Delete".



The screenshot shows a form for creating a new user. It includes the following fields and controls:

- New Username:
- Level:
- Read Only:
- Password:
- Verify Password:

At the bottom of the form, there are two red buttons: "Submit" and "Back".

Read Only: If this box is checked off the user may view anything but does not have the ability to modify anything.

Deleting an Account

In order to delete a user account, you must first select the **'Users'** link and click on **'Accounts.'** Once you have the **Current Users** page open, you must select **'Delete'** at the bottom of the screen.



The screenshot shows a box titled "Current Users" in red text. Below the title, the text "rtadmin" and "Tester" is displayed. At the bottom of the box, there are two red buttons: "Add" and "Delete".

A list of the **'Current Users'** will appear, with a red **'X'** next to each name. You can click on the red **'X'** to delete the user. This will bring you back to the **'Current Users'** page.

Privileges

Touchscreen Sign In

The **'Edit User Privileges'** web page is used to set which touch screen tabs will be available to each of the user levels.

Touchscreen Sign In

Enable/Disable

Users Must Login at Touch Screen

Enable:

If Touchscreen Sign In is enabled then users must sign in before gaining access to any of the Tabs of the r-TC's Touchscreen.

If Touchscreen Sign In is not enabled then all the tabs of the Touchscreen will be continuously available.

Touchscreen Tabs

Use this web page to determine which user levels have access to which tabs on the r-TC's touchscreen. These settings only have an effect if Touchscreen Sign In is enabled.

First select the User Level you wish to edit then use the check boxes to give or deny access to the specific tabs for that specific User Level.

Admin
Owner
Tech
Manager
Guest

Touch Screen Tabs - Tech

Use the check boxes to set which tabs will be available to a user at this level

Operator	<input checked="" type="checkbox"/>
Today's Stats	<input checked="" type="checkbox"/>
Stats	<input type="checkbox"/>
Shift	<input checked="" type="checkbox"/>
Tools	<input checked="" type="checkbox"/>
Report	<input checked="" type="checkbox"/>
Vehicles	<input checked="" type="checkbox"/>
Overrides	<input checked="" type="checkbox"/>
Alerts	<input checked="" type="checkbox"/>
History	<input checked="" type="checkbox"/>
I/O	<input checked="" type="checkbox"/>
Sensors	<input checked="" type="checkbox"/>
Test Chemicals	<input checked="" type="checkbox"/>
Admin	<input checked="" type="checkbox"/>
Licence	<input checked="" type="checkbox"/>
Diagnostic	<input checked="" type="checkbox"/>

The check boxes that are greyed out are available by default to all user levels.

System Setup

The **System Setup** web page is used to set parameters that may vary from car wash to car wash. For example the number of outputs and whether on not a PBS 4000 is being used.

Many of the values on the **System Setup** pages are fundamental to the operation of the r-TC and changing them will require the r-TC to be rebooted. If you change any of these values the r-TC will reboot itself automatically (you will be notified before this happens).

If you continue and save the modifications you have made, the r-TC Tunnel Controller will be automatically rebooted.

Are you sure you want to continue?

Yes

No

Interfaces

I/O Nodes (NIP 30 Network Interface Processors)

Number of I/O Nodes:

IP Address of Node 1:

KTR-EXI Boards

Number of KTR-EXI Boards:

ECU 1911's

Number of ECU 1911's:

PBS 4000

Number of PBS's:

WashSoft

Enable:

Touchscreen PBS

Run by default on r-TC
touch screen:

FTP

If FTP is enabled then an anonymous user can connect to the r-TC and will be able to transfer the Black Box files, the configuration file, and backups of the configuration file off of the r-TC. After enabling this feature the r-TC may reboot twice.

Enable:

Modbus RTU-485 Configuration

Baud rate:

Parity:

Stop Bit:

Data bits:

I/O Nodes

At the initial setup of the equipment it will be necessary to set the number of I/O nodes that are included with the system. Each I/O node represents twenty outputs, for example, a sixty function controller has three I/O nodes.

Enter the number of I/O nodes in the edit box then click on the **'Submit'** button. The IP address for each I/O node will be automatically generated and should not be changed.

PBS 4000

Number of PBS's: <input type="text" value="1"/>	New car from teller is current car on PBS: <input type="checkbox"/>
Enable Stacking: <input type="checkbox"/>	
IP Address of PBS 1: <input type="text" value="192.168.1.71"/>	Port Number for PBS 1: <input type="text" value="20260"/>

Select the number of PBS 4000's that were purchased from the drop down box. If no PBS 4000's were purchased select zero.

The IP address and port number of each PBS 4000 will be automatically generated and should not be changed.

Use the **'Enable stacking'** check box to turn this functionality on or off. If stacking is on the PBS 4000 can be used to create and manage a queue of up to five cars waiting to enter the car wash. If stacking is off, a new car cannot be added until the previous car has entered the car wash.

New Car From Teller is Current Car on PBS: This option only applies if stacking is enabled. The "Current Car on PBS" refers to the car in the queue to which changes will be applied if the attendant presses a button on the PBS 4000 key pad. If this option is selected then whenever the r-TC receives a new wash package from a teller then this new car will automatically become the car of interest on the PBS 4000. If this option is not selected then the "Current Car on PBS" will most likely be the next car to enter the wash (depending on the recent actions of the attendant).

KTR-EXI Boards

This section is used to configure the r-TC's interface to a Laguna KTR-EXI Board. This board is used exclusively for retrofits where the r-TC needs to drive the outputs of an older Exacta system. For this reason a detailed explanation of this functionality will be omitted from this document. This functionality is an option that may or may not have been included with the purchase of your software licence.

Number of KTR-EXI Boards: <input type="text" value=""/>

ECU 1911s

The Advantech ECU1911 is a piece of external hardware that can be used to provide additional inputs and outputs to the r-TC. Each ECU 1911 has 32 digital inputs, 8 analog inputs, and 32 digital outputs. Enter the number of ECU 1911's in the edit box, enter the IP address of each ECU1911, then click on the **'Submit'** button

Number of ECU 1911's: <input type="text" value="1"/>
IP Address of ECU 1911 1: <input type="text" value="127.0.0.1"/>

Washsoft

Enable:	<input checked="" type="checkbox"/>		
IP Address of WashSoft PC:	<input type="text" value="192.168.1.15"/>	Port Number of WashSoft Program	<input type="text" value="20254"/>

If the system is going to be set up with a WashSoft system then use the **'Enable'** check box to turn on this feature. The IP address and port number of the WashSoft computer will be automatically generated and can be modified if necessary.

Touchscreen PBS

The Touchscreen PBS is an option that may or may not have been included with the purchase of your software licence. Similarly to the PBS 4000, the Touchscreen PBS is intended to be used by a car wash attendant and can be used to sell car washes and also to operate the wash. The Touchscreen PBS can be installed and run on a separate touchscreen computer or it can be run on the touchscreen running the r-TC software (mounted in the r-TC panel). If this check box is enabled then when the r-TC is rebooted the touchscreen computer in the r-TC panel will default to displaying the touchscreen PBS, otherwise the regular r-TC sign in screen and tabs will be displayed.

No matter which interface is displayed by default it is always possible for a user to switch back and forth from the r-TC tabs to the Touchscreen PBS.

Run by default on r-TC touch screen:	<input checked="" type="checkbox"/>
--------------------------------------	-------------------------------------

Modbus RTU-485

The r-TC is capable of communicating with certain models of Variable Frequency Drives (VFD's) using the Modbus RTU-485 protocol. In this way the r-TC can control the RPM of an electric motor. The r-TC uses one of its serial ports (COM2) to communicate with the VFD's. Use these settings to configure the r-TC's COM2 serial port to match the settings of the VFD's. Since the r-TC has only one serial port capable of RS 485 communication all VFD's controlled by the r-TC must have the same settings for serial communication (the same baud rate, the same number of stop bits, etc.). The r-TC can control a maximum of 8 VFD's.

To add a VFD to the **Modbus Devices** r-TC use the web page under the **System Setup** menu (see below).

A VFD can be used to drive the conveyor motor and can also be used as an output for the Generic Equipment type.

Baud rate:	<input type="text" value="19200"/>
Parity:	<input type="text" value="Odd"/>
Stop Bit:	<input type="text" value="1"/>
Data bits:	<input type="text" value="8"/>

Modbus Devices

The r-TC is capable of communicating with certain models of Variable Frequency Drives (VFD's) using the Modbus RTU-485 protocol. In this way the r-TC can control the RPM of an electric motor for the conveyor or a piece of wash equipment. The r-TC can control a maximum of 8 VFD's. Every VFD that is to be controlled by the r-TC needs to be added and configured using this web page.

To add a new VFD to the r-TC system click on the link at the bottom of the page.



The screenshot shows a configuration form for a VFD. It includes the following fields and values:

- Modbus Address: 1
- Device Type: Mitsubishi D700
- Device type: VFD
- Motor Nameplate RPM: 1725 rpm
- Motor Nameplate Frequency: 60 Hertz

Modbus Address: Also known as the Modbus Slave Address this is a unique identifier for each Modbus device (or VFD) that is connected to the r-TC. This address must also be set on the VFD itself.

Device Type: Select the model of VFD that you are using. If your VFD is not in this list then please contact Laguna Industries for assistance.

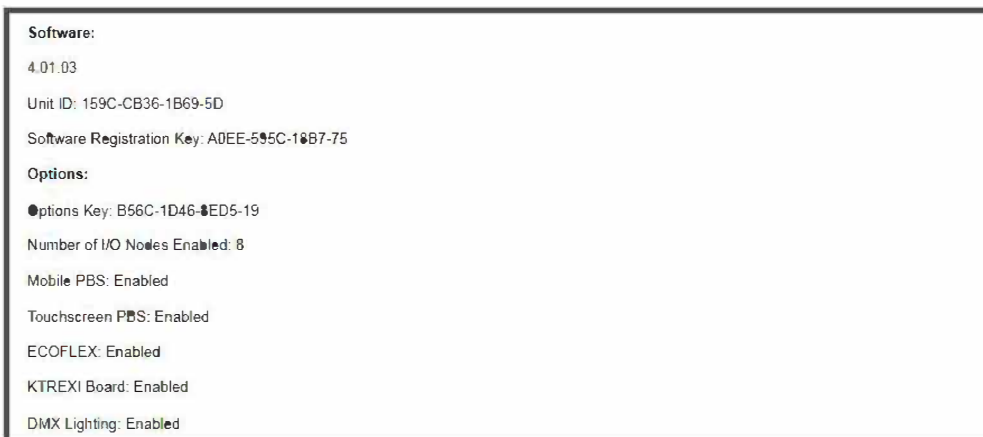
Motor Nameplate RPM: The nameplate RMP is a parameter of the electric motor being driven by the VFD and not the VFD itself. It can usually be found on the electric motor.

Motor Nameplate Frequency: The nameplate frequency is a parameter of the electric motor being driven by the VFD and not the VFD itself. It can usually be found on the electric motor.

Once you have added a VFD to the r-TC it will then be selectable as an output on the web page for the Conveyor and on the web page for the Generic equipment type.

Version Information

This web page is used to provide valuable information on the software version numbers of the r-TC and on any other hardware that might be interfacing with the r-TC, such as I/O Nodes and PBS 4000's.



The screenshot displays the following version and configuration information:

- Software: 4.01.03
- Unit ID: 159C-CB36-1B69-5D
- Software Registration Key: A0EE-595C-18B7-75
- Options:
 - Options Key: B56C-1D46-8ED5-19
 - Number of I/O Nodes Enabled: 8
 - Mobile PBS: Enabled
 - Touchscreen PBS: Enabled
 - ECOFLEX: Enabled
 - KTREXI Board: Enabled
 - DMX Lighting: Enabled

With the purchase of the r-TC software license, certain options can be enabled (or not) depending on what exactly was purchased. The Options section of this page displays which options were included in the software license and which were not. At any time additional options can be purchased by obtaining a new “Options Key” from Laguna Industries.

Printers

A printer may be connected to the r-TC to print such things as receipts for customers, shift reports for employees, daily and period reports of washes sold, and reports of pending maintenance tasks. Two types of printers can be connected to the r-TC, a Samsung serial printer which must be connected to the serial port of the Touch Screen computer (on the web page this printer is referred to as “Printer at the r-TC Panel”) and a Bixelon SRP-350 plus III Ethernet Printer which must be connected to the r-TC’s router (on the web page this printer is referred to as “Ethernet Printer”).

Use the web interface to configure which reports or receipts are sent to which printer. In most cases only one printer will be connected to the r-TC.

Where should car wash receipts be printed?

Printer at the r-TC panel:

Ethernet Printer:

Where should shift reports be printed?

Printer at the r-TC panel:

Ethernet Printer:

Where should daily and period reports be printed?

Printer at the r-TC panel:

Ethernet Printer:

Where should maintenance reports be printed?

Printer at the r-TC panel:

Ethernet Printer:

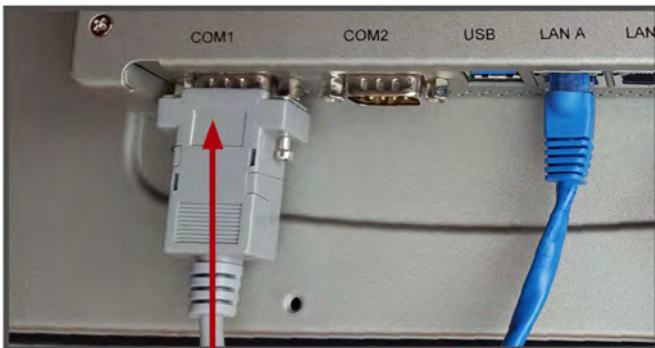
Thermal Printer Settings (printer at the rTC panel)

Baud Rate: 9600 Com Port: 1

19200

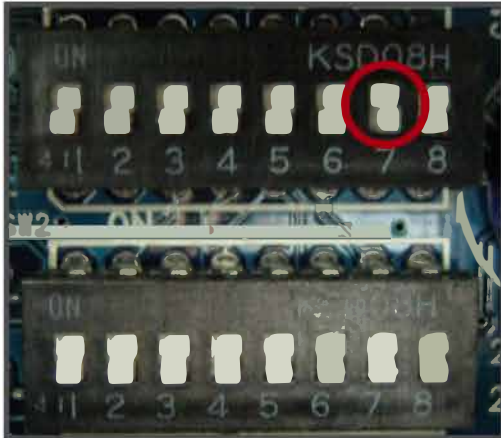
Thermal Printer Settings

Connect the printer to the touch screen computer’s COM 1 serial port.

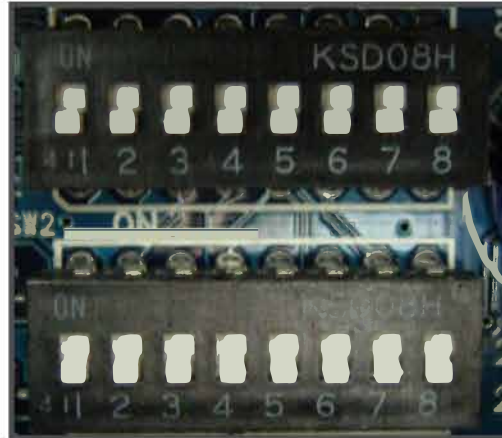


Thermal printer settings allow the user to set the Baud rate and com port of the Samsung thermal printer (**KTR-LP-T**) connected to the touch screen (note: Only the Samsung printer will work with the system). To set the baud rate or to check the baud rate on your printer turn it over and take the cover off the bottom left of the printer. Check the following Switch Sets. If you need to change or set the baud rate, make sure you turn off the printer before changing the switch sets. Once the changes are made, turn the printer back on to complete the new settings.

NOTE: If the Switch Sets are moved while the printer is on, the baud rates will not change until the printer has been turned off, then on.



9600



19200

Ethernet Printer Settings

IP Address:	<input type="text" value="192.168.1.95"/>	Port:	<input type="text" value="9100"/>
-------------	-------------------------------------------	-------	-----------------------------------

Ethernet printer settings allow the user to set the IP Address and Port Number of the **Bixolon SRP-350 Plus III** Ethernet printer connected to the r-TC's router. The IP Address and Port Number must match the settings on the printer itself.

Configuring the Bixolon SRP-350 Plus III Ethernet Printer for Use with the r-TC

Before You Start

The printer and the r-TC communicate over an Ethernet. For this to work properly the printer has to have a Fixed IP Address that the r-TC can find.

The printer has a web interface which can be used to set the IP Address but unfortunately the printer arrives from the factory configured to obtain an IP address using DHCP.

In general we need to perform the following steps:

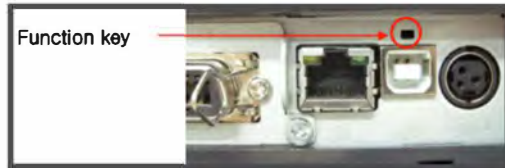
1. Connect the printer to a router that has **DHCP** enabled.
2. Use the button on the printer to find out which **IP Address** was assigned to the printer.
3. Go to the printer's web interface and change its IP Address to a fixed value of **192.168.1.95**.
4. Test.

Connect The Printer To a Router

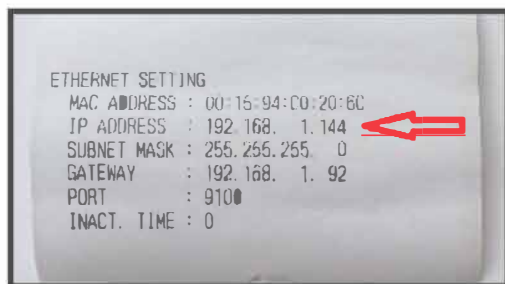
Start with the printer turned off. Use an Ethernet cable to connect the printer to a router that has DHCP enabled (most routers will have DHCP enabled).

Determine Which IP Address Was Assigned To The Printer

Turn on the printer and wait at least 10 seconds. Push the function key located at the back of the printer. The button is quite small and hard to access, a paper clip will work well.



The current Ethernet setting will be printed out. This will only work once per power-up of the printer so if you need to print the settings again you will have to power cycle the printer first.



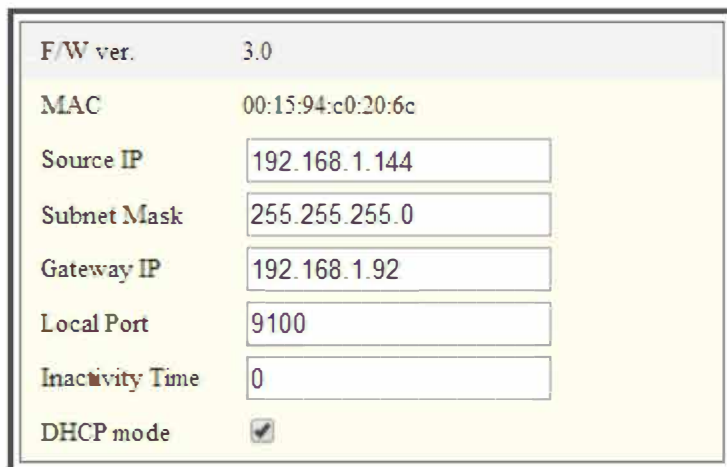
In this example the IP Address we are looking for is **192.168.1.144**.

Change The Ethernet Setting of The Printer

At this point you will need a computer that is connected to the same router as the printer. Open a browser and go to the printer's web page by typing the IP Address shown above into the address bar of the browser (in our example this is 192.168.1.144 but the IP Address will be different for you).



You will be brought to the following web page.

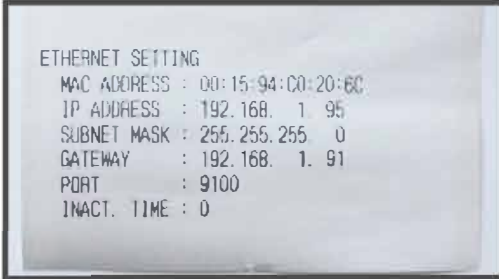


Make the following changes then click on the Apply button.

1. Set the Source IP to **192.168.1.95**
2. Keep the Subnet Mask as **55.255.255.0**
3. Set the Gateway IP to **192.168.1.91**
4. Uncheck the **DHCP** checkbox

Test

Power cycle the printer, wait 10 seconds and then press the function key to print out the Ethernet Setting. Verify that the settings are correct.



Units/Languages

Units



At the initial setup of the equipment it will be necessary to set the units that you prefer.

If you leave the **Length** and **Temperature** to **Auto**, the r-TC will recognise the country that was set in the regional settings of your touch screen and set the units accordingly.

Language

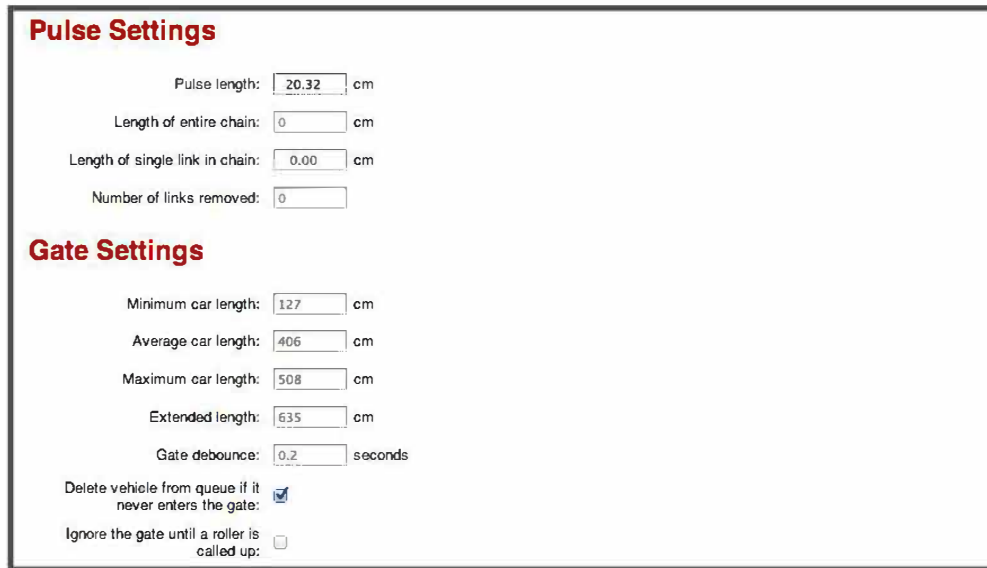


Touch Screen: This control is used to determine the language used on the r-TC's Touch Screen computer.

Remote Controller: This control is used to determine the language of the alert descriptions that are transmitted to a remote device controlling the r-TC. The interface describing how a remote device can be used to control the r-TC is described in a separate document.

Programmable Alerts in English and French: If this check box is enabled then it will be possible to enter the description of a programmable alerts in both English and French. When an alert description is transmitted to a remote device controlling the r-TC, both languages will be included in the XML message.

Gate/Pulse



Pulse Settings

Pulse length: cm

Length of entire chain: cm

Length of single link in chain: cm

Number of links removed:

Gate Settings

Minimum car length: cm

Average car length: cm

Maximum car length: cm

Extended length: cm

Gate debounce: seconds

Delete vehicle from queue if it never enters the gate:

Ignore the gate until a roller is called up:

This web page allows you to configure the gate and pulse settings.

Pulse Settings

Pulse Length: This is a mandatory field and represents the length of conveyor travel corresponding to one pulse.

The following parameters, **“Length of entire chain”**, **“Length of a single link of chain”** and **“Number of links removed”** are not mandatory parameters and can all be left at zero if desired. These parameters are used by the r-TC to automatically compensate for any links of the conveyor chain that might be removed to tighten the chain (this usually occurs after some time when the conveyor chain begins to slacken).

Length of entire chain: This is the length of the entire chain measure when the chain is new and has not begun to slacken.

Length of a single link of chain: This is the length of a single link of chain measure when the chain is new and has not begun to slacken.

Number of links removed: This value should be set at the time when links are being removed to tighten the chain.

Gate Settings

Minimum Car Length: If the gate is on for less than this length, the r-TC will assume that a car has not entered the gate. After a car has been in the gate for this length, the wash package will be added to the r-TC’s counters.

Average Car Length: As a car is pushed through the gate, the full car length is not yet known. If there is equipment that is on during this time (i.e. very close to the gate), a car length may be needed by the r-TC to control the equipment. In this case the average car length is used in any calculations until the real car length is measured.

Maximum Car Length: This is the maximum permissible length of a car. If the gate is on for more than this length, the r-TC will wash the car as if its length is the maximum car length. This setting is used to prevent two cars getting washed as one.

Extended Length: Some wash packages may be set up to allow cars of an extended length (e.g. a limousine). If a wash package is selected with Extended Length enabled, the r-TC will use this value as the maximum car wash length.

Gate Debounce: It is common for a car wash to have a noisy gate signal requiring **'debounce'**. For the r-TC to recognize the gate signal as truly being on, the gate must be on continuously for this period of time.

Delete Vehicle From Queue If It Never Enters the Gate: After a wash package has been selected for a vehicle, the r-TC will wait for the vehicle to enter the gate. If the conveyor runs twice its length and the vehicle has still not entered the gate the r-TC assumes that there is a problem with the vehicle and the conveyor will automatically stop. If this check box is selected, the r-TC assumes the vehicle has driven off and automatically deletes the vehicle from the queue. If this check box is not selected the r-TC keeps the car in the queue and waits for an attendant to either restart the conveyor or manually delete the vehicle from the queue. This box is usually checked for unattended car washes and unchecked for attended car washes.

Car Wash Address

Car wash name:	<input type="text" value="Kesseltronics Systems"/>
Address:	<input type="text" value="5212 Harwood Blvd"/>
City:	<input type="text" value="Hudson"/>
State:	<input type="text" value="Quebec"/>
Country:	<input type="text" value="Canada"/>
Zip code:	<input type="text" value="J0P 1H0"/>
Phone number:	<input type="text" value="450-458-8826"/>
Contact name:	<input type="text"/>
Contact phone number:	<input type="text"/>

The car wash address as entered here will appear on receipts, shift reports, and on the web interface's home page. The contact name and phone number will only appear on the web page, not on receipts or shift reports.

Test Chemicals

Time Limit:	<input type="text" value="5"/>	minutes
Allow while conveyor is running:	<input type="checkbox"/>	

The r-TC's **'Test Chemical'** feature is intended to be used by the chemical supplier of your car wash. It allows the supplier to force on equipment similarly to the r-TC's "Overrides" features, but the user is limited to only certain pieces of equipment. The intention is that a chemical supplier will be able to test if the equipment he has resupplied is now working correctly without giving the supplier the ability to override any other pieces of equipment.

Time Limit: If a supplier has activated a piece of equipment using this feature, the equipment will revert back to automatic mode after this amount of time. This is intended as protection against a supplier forgetting to deactivate the equipment after his test is concluded.

Allow While Conveyor is Running: If this check box is not enabled then the supplier will only be able to perform tests when the conveyor is not running. If this check box is enabled then the supplier can perform the test at any time, even if cars are being washed.

RFID Reader

The reader is used to read Pre-paid customers' RFID tags.

Enable:	<input type="checkbox"/>
Power:	<input type="text" value="100"/> 0 to 255
Sensitivity:	<input type="text" value="100"/> 0 to 255
*Located at entrance of wash:	<input type="checkbox"/>

Enable: Check this box if an RFID reader was purchased along with the r-TC.

Power (0 to 255): The power refers to the power the RFID reader emits to energize the RFID tags.

Sensitivity (0 to 255): The sensitivity refers to the sensitivity of the reader as it tries to detect the energized RFID tag.

The power and sensitivity are used to adjust the distance from the reader at which an RFID tag is first detected. It is recommended to leave the power at the default value of 100, then adjust the sensitivity until the reader detects the RFID tags at the appropriate distance. If the sensitivity is at its maximum, and the tags are still not detected early enough, then start increasing the power.

Located at Entrance of Wash: If this check box is selected, then it is assumed that the RFID reader is located at a position that is just before the entrance of the wash. When the r-TC detects an RFID tag it assumes that the car is about to enter the wash. The r-TC will add the car to the queue and, if necessary, move it up in the queue so that it is the next car to enter the wash. If this check box is NOT selected, then it is assumed that the RFID reader is located further back from the wash entrance. When an RFID tag is detected the r-TC will add the car to the end of the queue.

centralACCESS

Laguna centralACCESS system can monitor multiple r-TC's at multiple car wash sites. Car counts are reported to a central server and the car wash owner can easily generate daily, period, and hourly reports of his car washes' activity. As well, any problems the r-TC may be experiencing (alerts) will be reported to the centralACCESS server. centralACCESS is a web based system requiring only a web browser and an internet connection to allow an owner visibility into all of his r-TC's



The screenshot shows a configuration window for centralACCESS. It includes the following elements:

- Enable:** A checked checkbox.
- r-TC Serial Number:** A text input field containing the value "10000".
- Server's URL:** A text input field containing the value "http://192.168.1.190:8080/cortex".
- Example:** A text label with the value "http://www.MyServer.com/cortex".
- Track cars washed only:** An unchecked radio button.
- Track cars washed, products sold, and payments received:** A checked radio button.
- Default cortex Payment Method:** A dropdown menu currently set to "Cash".
- Enable automatic software updates:** A checked checkbox.

For centralACCESS to function the r-TC must be connected to the internet.

Enable: Check this box if the r-TC is to report to centralACCESS.

r-TC Serial Number: Enter the r-TC's serial number. This number must be different from any other serial number reporting to centralACCESS.

Server's URL: Enter the URL (web address) on the centralACCESS server. This is the same URL you use to sign in to centralACCESS to check your car washes.

Post Cars Washed: Select this option if you would like to post each car washed to the centralACCESS server. If this option is selected then centralACCESS will be able to generate the following reports.

- General Activity
- Hourly Activity
- Activity With Weather
- Inactivity With Weather

Post Usage: Select this option if you would like to post each Wash Package used and its value to the centralACCESS server. Options and Coupons will also be reported. Do not select this option if some other device (such as a Teller) is already reporting this information to the centralACCESS server. If this option is selected then centralACCESS will be able to generate the following reports.

- Activity By Product
- Comparison Report

Post each car washed as a Sale: Select this option if you would like the r-TC to report each car washed as a sale to the centralACCESS server. Do not select this option if some other device (such as a Teller) is already reporting this information to the centralACCESS server. If this option is selected then centralACCESS will be able to generate the following reports.

- General Sales
- Sales By Product
- Comparison Report

Default centralACCESS Payment Method: For every car wash sold the attendant can select from the PBS 4000 the payment method used by the customer. This payment method is reported along with the sale to centralACCESS. Use this drop down box to select the default payment method which will be reported to centralACCESS if the attendant does not intervene. If you are only using one payment method (such as cash) then that method should be selected here.

Enable Automatic Software Updates: The centralACCESS system allows the r-TC to perform automatic software updates. If you would like the r-TC to update itself automatically when a new software version is available then make sure that this check box is enabled. This feature is typically used for bug fixes and not for new feature releases.

Suncor Server

This web page is used to configure the r-TC to perform automatic software updates using a Suncor Server as the source of the update.

Enable:	<input checked="" type="checkbox"/>
r-TC Serial Number:	<input type="text" value="12345678910"/>
Server's URL:	<input type="text" value="http://www.MyServer.com"/>
Example: http://www.MyServer.com	

Enable: Check this box if the r-TC is going to perform automatic software updates using a Suncor Server as a source for the updates.

r-TC Serial Number: Enter serial number of the Advantech Touchscreen Computer. This number must be different from any other serial number reporting to the Suncor Server.

Server's URL: Enter the URL (web address) on the Suncor server.

Once the r-TC has contacted the Suncor Server this web page will display a message indicating whether there is an update pending or not. The update can be started manually from this web page otherwise the r-TC will perform the update automatically overnight.

WashCode

The r-TC is capable of communicating with Kesseltronics' WASHCODE car wash code system. A code that was sold using WASHCODE can be entered into the r-TC using the PBS 4000. The r-TC will verify the code with WASHCODE then either issue the correct wash package or notify the attendant of the failure reason via the PBS 4000's display. If the car is washed then WASHCODE will be notified that the code was used.

Enable:	<input type="checkbox"/>		
IP Address of WASHCODE computer:	<input type="text" value="192.168.1.1 22"/>	Port Number of WASHCODE Program	<input type="text" value="20270"/>

For the r-TC to work with WASHCODE, both computers must be connected to the same computer network.

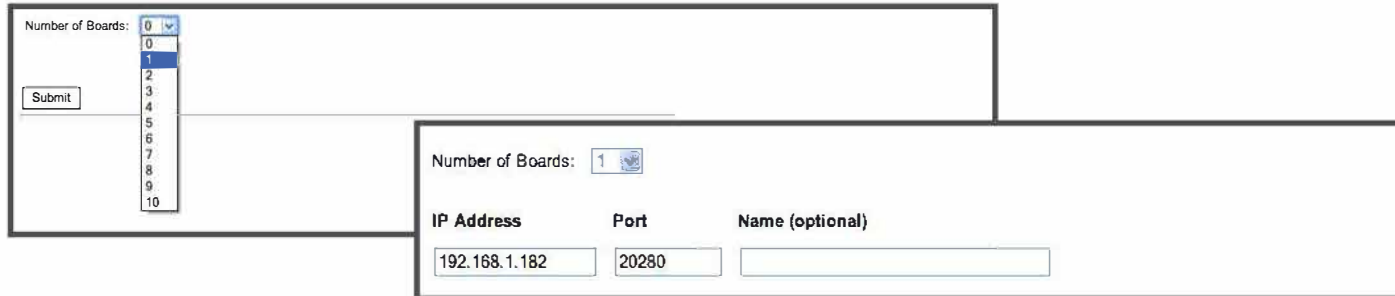
Enable: Check this box if the r-TC is to be used to verify codes.

IP Address of WASHCODE Computer: Enter the local network IP address of the WASHCODE computer.

Port Number of WASHCODE Program: Please use the default value.

NIP 9

The NIP 9 is a Network Interface Processor board produced by Laguna Industries. The NIP 9 provides an interface to devices such as a scrolling sign. Select the number of boards from the dropdown box.



The screenshot shows a web interface for configuring the NIP 9. On the left, a dropdown menu labeled 'Number of Boards' is open, showing options from 0 to 10, with '1' selected. Below the dropdown is a 'Submit' button. On the right, a form contains three input fields: 'IP Address' with the value '192.168.1.182', 'Port' with the value '20280', and 'Name (optional)' which is empty.

IP Address: The IP address of the NIP 9 on the local network. Each NIP 9 must have its own unique IP address.

Port: The port number of the NIP 9. The default port number should be used in most cases.

Name: The name of the NIP 9 is an optional field. If a name is entered it will be used to identify the board in other web pages (such as the web pages for the scrolling sign equipment types).

PCAN Teller

The controls on this page are used to configure the r-TC to communicate with a Petro Canada Teller. Some Petro Canada car washes may be using their Glide or Rollover systems which require some extra configuration.



The screenshot shows a web interface for configuring the PCAN Teller. It includes an 'Enable' checkbox which is checked. Below it are two input fields: 'Send To PCAN Teller on this Port' with the value '10001' and 'Receive From PCAN Teller on this Port' with the value '2101'. At the bottom, there are three radio buttons for 'Car Wash Type': 'Normal' (selected), 'Glide', and 'Rollover'.

Enable: If the system is going to be set up with a PCAN teller then use the 'Enable' check box to turn on this feature.

Send To PCAN Teller on this Port: Port number used for the communication between the r-TC and the PCAN teller. Typically this value should not be changed from its default.

Receive From PCAN Teller on this Port: Port number used for the communication between the r-TC and the PCAN teller. Typically this value should not be changed from its default.

Glide

Tunnel Ready: Use this section to configure the point at which the r-TC will inform the teller that it is ready to accept the next vehicle. This can be set to either when the previous car has exited the gate photo eye or when the previous vehicle reaches a configurable position within the tunnel.



Ready when previous car clears the gate:

Ready when previous car reaches a position in the tunnel:

Position: cm

Position: If the “Ready when previous car reaches a position in the tunnel” radio button is selected, then this value is used to set the actual position in the tunnel which the previous car must reach before the r-TC informs the teller that it is ready for the next vehicle.



Wash Package Mapping for the Glide System

Touchless Clean:

Cloth Clean:

Wash Package Mapping for the Glide System: The PCAN Glide Teller will request one of two wash packages for the cars that are being washed. The Teller will request either the Touchless Clean or the Cloth Clean. Use this mapping so that the r-TC knows which one of the r-TC’s own wash packages should be assigned to a vehicle when the r-TC receives a wash package request from the teller.

Option Mapping for the Glide System: The PCAN Glide Teller will request any of seven options for each of the cars that are being washed. Use this mapping so that the r-TC knows which one of the r-TC’s own options should be assigned to vehicle when the r-TC receives an option request from the teller.



Triple Foam:

Tire Rim:

Rustite:

Clear Coat:

Vision Clear:

Mineral Free:

Body Gloss:

Wash Fulfillment: As part of the r-TC’s communication protocol to the PCAN Teller the r-TC sends special information to the teller when the car is far enough into the wash that the customer’s purchase is considered to be fulfilled. Enter the position in the wash that you would like the car to reach for the r-TC to consider the customer’s purchase to be fulfilled and to communicate that information to the PCAN teller.



Position: inches

Loading Sign

As part of the r-TC's communication protocol with the PCAN Teller the r-TC sends information that is intercepted and used by a video Loading Sign located at the entrance of the wash. Bit values are sent by the r-TC telling the sign to display either its Home Screen or one of 5 other screens.

If the car wash is idle then the Home Screen will be displayed. Screen 1 will be activated upon receipt of a valid wash package and Screen 3 will be activated when the Car in Position sensor comes on. All other screens will be active for a configurable but fixed amount of time.

Home Screen		Bit Value: 0
Screen 1	Time: 0.0 seconds	Bit Value: 0
Screen 2		Bit Value: 7
Screen 3	Time: 5.0 seconds	Bit Value: 15
Screen 4	Time: 12.0 seconds	Bit Value: 31
Screen 5	Time: 8.0 seconds	Bit Value: 63

Bit Value: The actual bit value that is sent by the r-TC as part of its communication protocol with the teller. Enter this here as a decimal value. For example if the bit value is 0x0f in hexadecimal then enter 15.

Time: The amount of time the screen is visible before switching to the next screen.

Open Hours

Closing Time Offset: 0 minutes

Closing Time Offset: If you are using a schedule for the Opening Hours of your wash then use this value to have the wash close this many minutes before the hour.

Rollover

Wash Package Mapping for a Rollover System: The PCAN Teller will request one of three wash packages for the cars that are being washed. The Teller will request either the Basic, Works, or Superworks. Use this mapping so that the r-TC knows which one of the r-TC's own wash packages should be assigned to vehicle when the r-TC receives a wash package request from the teller.

Wash Package Mapping for a Rollover	
Basic:	none
Works:	none
Superworks:	none

Hamilton Kiosk

If the r-TC is going to be set up with a Hamilton Kiosk then use the **'Enable'** check box to turn on this feature. The default port number that the Hamilton Kiosk uses to communicate with the r-TC **8052** is but can be changed if necessary.



Enable:
Port:

Wash Package Mapping: The Hamilton Kiosk will send wash packages as a number from **1 to 8**. Use this web page to decide which r-TC wash package is associated with which number sent by the Hamilton Kiosk.



1:
2:
3:
4:
5:
6:
7:
8:

Option Mapping: The Hamilton Kiosk will send options as a number from **1 to 16**. Use this web page to decide which r-TC option is associated with which number sent by the Hamilton Kiosk. On the Hamilton Kiosk options are referred to as Buy-Up's or A-La-Carte Items.



1:
2:
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:
16:

Time Server

Use the Time Server if you would like the r-TC to synchronize its clock with an SNTP time server such as **"time.windows.com"**. For this to work the r-TC must be connected to the internet.



Address:
For example: time.windows.com

To disable the Time Server simply leave the Address blank.

Cameras

The PBS 5000 is capable of displaying an image of each car that goes through the wash. This will make it easier for an attendant to identify the exact car upon which operations are being performed.

A Lorex camera is required for this feature.

The camera should be configured with a fixed IP address and connected to the same network as the r- TC.

A screenshot of a configuration window for a camera. It contains several settings: 'Enable:' with a checked checkbox; 'IP Address of Camera' with a text box containing '192.168.1.10'; 'Trigger on Wash Package' with a selected radio button; 'Trigger on Presence Detector' with an unselected radio button; and 'Trigger on Digital Input' with an unselected radio button.

Enable:

IP Address of Camera:

Trigger on Wash Package:

Trigger on Presence Detector:

Trigger on Digital Input:

Enable: Use this check box to enable this feature.

IP Address of Camera: The camera should be configured to have a fixed IP address. Enter that address here.

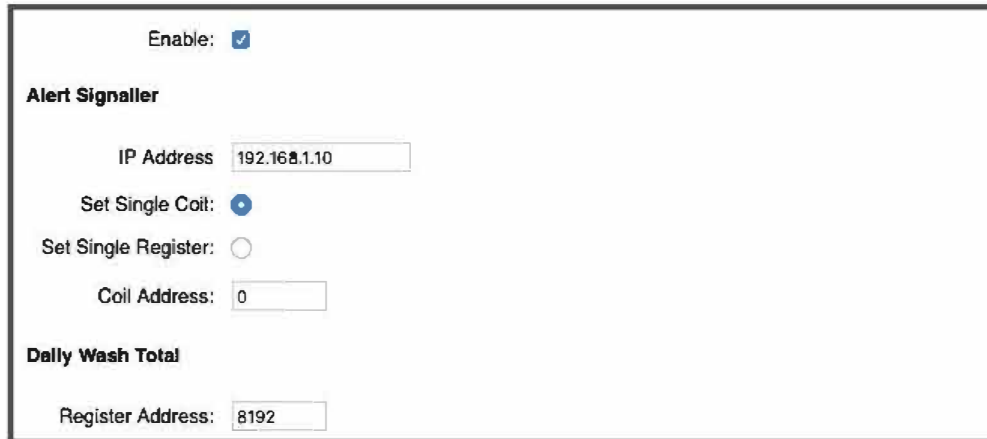
Username of Camera/Password of Camera: Enter the credentials of the camera so the r-TC will be able to access this device.

Trigger: Choose the moment in time at which the camera will capture the picture of the car to be displayed on the PBS 5000.

Input: If the Trigger is set to “Trigger on Digital Input” then enter the digital input that will be used to trigger the taking of the picture.

Chrysler Modbus

Enable this feature if the r-TC needs to communicate with a Chrysler system using the Modbus protocol over TCP. The r-TC will tell the Chrysler system if a critical alert is active by either activating a single coil or by writing a value into a specific register.



The screenshot shows a configuration window for the Chrysler Modbus feature. At the top, there is an 'Enable:' checkbox which is checked. Below this, the 'Alert Signaller' section contains an 'IP Address' field with the value '192.168.1.10'. Underneath, there are two radio buttons: 'Set Single Coil:' which is selected, and 'Set Single Register:' which is unselected. Below the radio buttons is a 'Coil Address:' field with the value '0'. The 'Daily Wash Total' section contains a 'Register Address:' field with the value '8192'.

Enable: Use this check box to enable this feature.

Alert Signaller

IP Address: The IP address is the address of the Chrysler modbus device receiving the communication.

Set Single Coil/Set Single Register: The r-TC can report a critical alert to either a modbus Coil or Register.

Coil Address: If the r-TC is reporting the alert status to a coil then set the address here. The coil will be set “on” if there are any critical alerts active.

Register Address: If the r-TC is reporting the alert status to a register then set the address here

Value When All Clear: If the r-TC is reporting the alert status to a register then set the numerical value to be written into the register when there are NO critical alerts active.

Value When Alerts Active: If the r-TC is reporting the alert status to a register then set the numerical value to be written into the register when there ARE critical alerts active.

Daily Wash Total

Register Address: The r-TC will report the total number of cars washed that day to the Chrysler system. Enter the modbus register address into which the r-TC will report this total.

Access Interface Setup

Enable this feature if the r-TC needs to communicate with one or more Tellers using the **PDQ Access interface**.

Enable:	<input checked="" type="checkbox"/>
Maximum Cars In Queue	<input type="text" value="2"/>

Maximum Cars in Queue: This is the maximum number of cars that can line up outside the car-wash waiting to be washed. Once a car enters the Gate Eye it is no longer counted as part of this queue.

Setting Up Your Inputs & Outputs

Select 'I/O' the link in the side menu

The screenshot shows the r-TC web interface. On the left is a vertical navigation menu with the following items: Home, System Setup (+), I/O (highlighted with a red arrow), Equipment, Schedules (+), Maintenance (+), Wash (+), Financial, Tools (+), Users (+), and Spy (+). The main content area is titled 'Outputs' and shows 'NIP 30 Node 1 Virtual'. Below this is the 'Inputs' section for 'Node 1', listing 'Input Assignment', 'Programmable Alerts', 'Program Requests', 'PBS 4000', 'User Defined Inputs', and 'User Defined Sensor Types'. At the bottom is the 'General' section with 'I/O Node Temperature Limits' and 'Vehicle Profiler'.

Outputs

Click on the 'Node 1' link to setup the outputs for the first I/O node.

Output #	Name	Power Up Time (sec)	Voltage	Relay Board Type	System Stop - Force On	Invert	Flashing Off	Flash Odd	Flash Even
1	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
16	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Standard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Enter a short descriptive name for each output that you use. This name will appear in dropdown boxes used when defining specific pieces of equipment.

Power Up Time: This timer is used for high power equipment. The r-TC will wait this amount of time after the last high power piece of equipment is started before activating the output.

Voltage: The voltage box is used for documentation purposes, it is the voltage of the 5 grouped outputs.

Relay Board Type: The relay board type menu is used for documentation purposes only, it defines the board as Standard, Solid State or Dry Contact.

System Stop - Force On: If this check box is selected, this output will be activated whenever the MCR (master control relay) input is off. For example, you may want to force the car wash doors open in the case of an emergency stop.

Invert: If this check box is selected, the functionality of the relay will be reversed. That is, if the equipment associated to this output is off then the relay will be closed and if the equipment is on then the relay will be open.

Flashing: If 'Flash Odd' or 'Flash Even' is selected, then the output will flash on/off when the associated equipment is active (for example, entrance signs). Outputs that are defined as odd will flash out of sync with outputs that are defined as even.

Note: If you are using incandescent light bulbs you will need to insert a solid state module not a relay module as the contacts will burn out.

Click on the 'Apply' or 'Submit' button when you have finished configuring the outputs for the first I/O node. Repeat for all remaining I/O nodes.

Virtual Outputs

Virtual outputs can be used by the Switch With Many Inputs equipment type. Most pieces of equipment that can turn on an output on an I/O node can also activate a virtual output. The virtual output can then be used as an input for the Switch With Many Inputs equipment type. In this way additional logic can be added to a piece of equipment.

Some (but not all) of the r-TC's inputs can be assigned to a virtual output as opposed to being assigned to a physical sensor. In this way additional logic can be added to an input.

This feature of the r-TC is intended for advanced users.



Click on the Add to create a new virtual output or click on the name of the output to edit an existing outputs.



Name: Choose a descriptive name to identify this virtual output.

System Stop - Force On: If this check box is selected, this virtual output will be activated whenever the MCR (master control relay) input is off.

Inputs

Click on the **'Node 1'** link to setup the inputs for the first I/O node.

Input #	Digital	Analog Sensor	Kesseltronics Temperature Sensor
1	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Ultrasonics

Input 1: Enabled:

Input 2: Enabled:

Input 3: Enabled:

Input 4: Enabled:

Each of the inputs of the I/O node can be configured individually depending on what kind of sensor is attached to that input.

Digital: Select digital for any sensor that is an “on or off” type of a sensor. For example photo eyes, bell hoses, and loops are all digital sensors.

Analog: Select Analog for any sensor that is not a simple “on or off” type of sensor but is providing a varying voltage based on a measured value. For example pressure sensors, strain gauges, and potentiometers are all analog sensors. Analog sensors must provide a voltage in the range of 0.0 to 5.0 volts.

Laguna Industries Temperature Sensor: Use this selection if a temperature sensor purchased from Laguna Industries is attached to this input.

Ultrasonics: The r-TC is capable of reading up to four ultrasonic sensors per I/O node. Ultrasonic sensors are used to measure the distance from the sensor to the nearest object blocking the sensor. Enable the checkbox for each ultrasonic sensor that is connected to this I/O node.

Each ultrasonic sensor can either be configured as either an Analog or Digital Input. When used as a digital input the ultrasonic sensor behaves like a proximity sensor, it will be “on” if it detects an object within a configurable distance (the set point). A hysteresis is used to prevent the digital value from oscillating or becoming unstable. When the ultrasonic sensor is set to Analog it can be used by either the Vehicle Profiler or for a User Defined Sensor Type.

Input Assignment

This web page is used to assign most of the inputs available in a car wash. Not all of the inputs apply to every car wash.

To expand section click on '+'



Click on the name to configure

	I/O Node	Input #	Normally Closed
MCR	1	1	<input type="checkbox"/>
Pulse	1	2	<input type="checkbox"/>
Backup Pulse	none	none	<input type="checkbox"/>
Gate	1	3	<input type="checkbox"/>
High Gate	none	none	<input type="checkbox"/>
Roller Detector	1	7	<input type="checkbox"/>
Tire Detector	1	8	<input type="checkbox"/>
Conveyor Run	none	none	<input type="checkbox"/>
Power	1	10	<input type="checkbox"/>

- + Push Button Functions
- + Safety Functions
- + Door Control
- + Sign and Traffic Control

Edit Input Assignment - Pulse

Hardware: Input:

Input Definitions

Basic Tunnel Functions

MCR: Connect this input to the master control switch of the car wash. This input indicates to the tunnel controller software the general status of the car wash equipment (on or off).

Pulse: Connect this input to the pulse encoder. The pulse indicates to the tunnel controller software the position of the car as it progresses down the car wash tunnel.

Backup Pulse: Some car washes may use a backup pulse encoder. If the main pulse fails the r-TC will automatically switch to the backup.

Gate: The gate sensor indicates to the tunnel controller software that a car has entered the car wash. Also, the gate sensor is used to determine the length of the car.

High Gate: The high gate sensor indicates to the tunnel controller software the positions of the front and back windshields of the car.

Roller Up Tire Switch: This input is used to tell the tunnel controller software that a roller has been requested. Since this is a tire switch, a roller will be only called up every second time the switch is activated. The r-TC can be configured to call up a roller on just the front tire, just the rear tire, or both.

Roller Detector: The roller detector sensor indicates to the tunnel controller software that a roller has been detected on the conveyor.

Tire Detector: This input is used to determine the positions of the tires.

Conveyor Run: This input is used to tell the tunnel controller software to run the conveyor. The conveyor will run only as long as the button is depressed.

Power: The power sensor indicates to the tunnel controller software that the power to the car wash has failed. The tunnel controller software will use the remaining power from a UPS to save the position of any cars still in the wash.

Side Mirror Detector Switch: Connect this input to the side mirror detector sensor. The side mirror detector sensor indicates to the tunnel controller software the position of the side mirror on the vehicle.

Push Button Functions

Pause: This input is used to tell the tunnel controller software to pause the conveyor.

Start/Resume: This input is used to tell the tunnel controller software to start the conveyor.

Roller Up Push Button: This input is used to tell the tunnel controller software to activate a roller. Unlike the Roller Up Tire Switch, a roller will be called up each time this switch is activated.

Wetdown: This input is used to tell the tunnel controller software to wetdown the car wash equipment.

No Pickup Retract: Some equipment will automatically retract over the bed of a pickup truck. This input should be connected to a button that an attendant can press to cancel the retraction of equipment (usually done if the pickup bed is covered).

Enable Web Overrides: This input is used to temporarily allow a remote user to use the r-TC's web interface to activate overrides. The input must be held on for at least 2 full seconds and for no more than 5 seconds.

Open Entrance Door: This switch is used to open the entrance door.

Close Entrance Door: This switch is used to close the entrance door.

Open Exit Door: This switch is used to open the exit door

Close Exit Door: This switch is used to close the exit door.

Clear Vehicle: This button will delete the last car in the queue provided the car has not reached minimum car length into the gate.

Detail 1/Detail 2: These buttons will act exactly like the Detail buttons on the PBS, they will toggle the activation of the Detail guns.

Safety Functions

Exit Anti-Col: The exit sensor indicates to the tunnel controller software that there is a car at the exit of the wash. The tunnel controller software will use this input to ensure that there are no collisions between cars at the exit of the wash.

Progress Detector: The progress detector sensor indicates to the tunnel controller software that a car has reached a certain point in the tunnel, usually about half way through.

Entrance Overheight: Connect this input to a sensor mounted at the entrance of the wash that indicates that a vehicle is too high to enter the wash. If this input is activated the overheight will be reported to a PCAN teller only.

Driver Side Mirror Fault: Connect this input to a sensor located at the entrance of the car wash pointing from floor to ceiling. This sensor should be located on the driver's side of the entrance of the car wash. This sensor is used to detect if the vehicle is centered or aligned properly and if there is a risk of collision with the equipment inside the car wash.

Passenger Side Mirror Fault: Connect this input to a sensor located at the entrance of the car wash pointing from floor to ceiling. This sensor should be located on the passenger's side of the entrance of the car wash. This sensor is used to detect if the vehicle is centered or aligned properly and if there is a risk of collision with the equipment inside the car wash.

Door Control

Entrance Door Limit Upper Switch: The entrance door limit upper switch is used to tell the tunnel controller software that the entrance door is completely open.

Entrance Door Limit Lower Switch: The entrance door limit lower switch is used to tell the tunnel controller software that the entrance door is completely closed.

Entrance Door Photo Eye: This sensor is used to indicate if there is anything blocking the entrance door from closing.

Exit Door Upper Limit Switch: The exit door limit switch is used to tell the tunnel controller software that the exit door is completely open.

Exit Door Lower Limit Switch: The exit door limit switch is used to tell the tunnel controller software that the exit door is completely closed.

Exit Door Bay Eye: This sensor is used to indicate that there is a vehicle approaching the exit door, signaling the door to open.

Exit Door PhotoEye: This sensor is used to indicate if there is anything blocking the exit door from closing.

Entrance Air Door Upper Limit Switch: The entrance air door upper limit switch is used to tell the tunnel controller software that the entrance air door is completely open.

Entrance Air Door Lower Limit Switch: The entrance air door lower limit switch is used to tell the tunnel controller software that the entrance air door is completely closed.

Exit Air Door Upper Limit Switch: The exit air door upper limit switch is used to tell the tunnel controller software that the exit air door is completely open..

Exit Air Door Lower Limit Switch: The entrance air door lower limit switch is used to tell the tunnel controller software that the entrance air door is completely closed.

Sign and Traffic Control

Presence Detector: This sensor is used to indicate that a vehicle is approaching the car wash or that there is a car located in front of the teller.

Car In Position: This sensor is used in car washes that use a two step loading system. The sensor indicates that the car has arrived at the second step of the loading system. The sensor is also used by an Entrance Door With Inside Loading, the sensor indicates to the door that the car is past the door.

Car Approaching: This sensor is used to open an entrance door with inside loading.

Barrier Loop: Connect this input to the loop that is located at the barrier used to allow cars to enter the wash. This input is used exclusively with the Barrier equipment type and indicates to the barrier when the car has completely passed the barrier and the barrier's arm can now be lowered.

Please note that some (but not all) of the r-TC's inputs can be assigned to a virtual output as opposed to being assigned to a physical sensor. In this way additional logic can be added to an input. This feature of the r-TC is intended for advanced users.

The following inputs can be assigned to a virtual output:

- High Gate
- Tire Detector
- Roller Up Push Button
- Open Entrance Door
- Close Exit Door
- Progress Detector 1
- Exit Door Bay Eye
- Presence Detector
- Barrier Loop
- Roller Up Tire Switch
- Side Mirror Detector Switch
- Wetdown
- Close Entrance Door
- Exit Anti-Col
- Progress Detector 2
- Entrance Door Photo Eye
- Car In Position
- Tire Detector
- Pause
- No Pickup Retract
- Open Exit Door
- Driver Side Mirror Fault
- Passenger Side Mirror Fault
- Exit Door Photo Eye
- Car Approaching

Programmable Alerts

This page is used to add programmable alerts to the car wash. Programmable alerts are activated by sensors connected to the r-TC. Depending upon what hardware is connected to the r-TC different sensor types will be available.

- **NIP30** boards allow for digital inputs (on/off), temperature sensors, or an analog sensor with a voltage range of 0.0 to 5.0 volts.
- **NIP9** boards allow for digital inputs only.
- **Virtual** boards allow for digital inputs only.

Click on the **Add** button to create a new programmable alert.

There are currently no alerts defined. Click on the Add button to create some.

AddBack

General Information

This section is used to configure some general information that applies to all types of alerts.

Name:

Level:

Delay On: seconds

Delay Off: seconds

Latched:

Omit from History:

Sound Alarm At PBS:

Hardware

Sensor

Sensor Type:

Normally Closed:

Physical Input of Sensor

Node: Input:

Additional Digital Input (optional)

Hardware: Node: Input: Normally Closed:

Name: The name of the alert that will appear on the web page and on the touch screen.

Level: The level refers to the seriousness of the alert. The following levels are selectable;

- **Warning:** The car wash will continue working as usual.
- **Pause:** The conveyor will pause, equipment defined as will continue running if applicable. To re-start conveyor once the alert has cleared, press on the 'Start' button on either the touchscreen or the PBS4000.
- **Stop:** The conveyor will stop and all equipment will stop. To re-start conveyor once the alert has cleared, press on the 'Start' button on either the touchscreen or the PBS4000.
- **Finish Wash:** The r-TC will finish washing the current cars (if any), then the conveyor will stop. No more rollers will be issued to prevent any more cars from entering the wash. The alert must be cleared before trying to re-start your wash.

Delay On: The alert will not become active unless the sensor indicates a problem for this amount of time. If this feature is no wanted then set the time to zero.

Delay Off: The alert will not become inactive unless the sensor indicates that the problem has ended for this amount of time. If this feature is no wanted then set the time to zero.

Latched: If enabled, the alert will remain active even if the sensor indicates that the problem has ended. An operator will have to go to either the PBS4000, touchscreen, or web interface to turn off the alert. This feature should be enabled if human intervention is mandatory.

Omit from History: If this option is selected then this alert will not be reported in the r-TC's history. This should only be enabled for less critical alerts that occur often, the intention is to avoid having the history flooded with unimportant messages.

Sound Alarm at PBS: If this option is enabled then an audible alarm will be sounded at the PBS whenever the alert becomes active. If the PBS is not configured to sound an alarm then this option will not be visible.

centralACCESS Level: If your r-TC is connected to a centralACCESS server then any alerts that may arise on the r-TC will be reported to centralACCESS. Each alert has a level of importance assigned to it that will be displayed on the centralACCESS web page where **'one'** is the least important and **'five'** is the most. Cus-tomize the alarms' levels to your liking. As well, if you do not wish an alert to be reported to centralACCESS at all, then set the alert to **'Exclude'** . If your r-TC is not connected to a centralACCESS server than this option will not be visible.

Support Document: The document selected from the drop down menu can be opened on the r-TC Home Page if an alert is active. For more info **see page 100.**

Notify by Email: If this check box is selected then a warning email will be sent out whenever this alert becomes active. For more information on emails **see page 110.**

Hardware: Use this drop down box to select the hardware that the r-TC is using to communicate with the sensor. Depending on what hardware is connected to the r-TC you will have a choice of NIP30, NIP9 and Rockwell I/O. The remaining controls on this web page will be different depending on what hardware type is selected.

Signaler Equipment: This option will only be visible if an "Internal Alert Signaler" equipment type has been created on your system. Use the drop down boxes to assign which outputs of the Internal Alert Signaler equipment will be activated whenever this alert is active. If you wish, the same output can be chosen for multiple Alerts.

Additional Digital Input If the Additional Digital Input is assigned then for the alert to be active the sensor must indicate an alert and the Additional Digital Input must be on. Please note that the Additional Digital Input can be assigned to a Virtual Output.

NIP 30



Sensor Type:

Normally Closed:

Sensor Type: Use this drop down box to select the type of sensor used. The NIP 30 board supports digital sensors, temperature sensors, and any analog sensor with a range of 0.0 to 5.0 volts. If have created a 'User Defined Sensor Type' it will appear as a selection in this drop down box.

Normally Closed: This check box should be selected if the alert is a normally closed input.

Low Limit: If the sensor measures a value below this value then the alert will become active.

High Limit: If the sensor a value below above this value then the alert will become active.



Sensor Type:

Normally Closed:

Physical Input of Sensor

Node: Input:

Node: List of available nodes.

Input: List of available inputs

NIP 9

The NIP 9 board supports only digital (on/off) sensors.



Hardware

Sensor

Sensor Type: Digital (On/Off)

Normally Closed:

Physical Input

Board: Input:

Normally Closed: This check box should be selected if the alert is a normally closed input.

Board: The name (or IP address) of the board to which the sensor is connected.

Input: The number of the input to which the sensor is connected.

Internal Alerts

This page is used to configure the internal alerts at the car wash.

	cortex Level	Notify by Email	Signaller Equipment Output
Power Failure	0=Exclude ▾	<input type="checkbox"/>	
Pulse Failure	0=Exclude ▾	<input type="checkbox"/>	Temp 1 ▾
Backup Pulse Failure	0=Exclude ▾	<input type="checkbox"/>	Temp 2 ▾
Entrance Door Failure to Open	0=Exclude ▾	<input type="checkbox"/>	Temp 3 ▾
Entrance Door Failure to Close	0=Exclude ▾	<input type="checkbox"/>	Temp 4 ▾
Exit Door Failure to Open	0=Exclude ▾	<input type="checkbox"/>	Temp 5 ▾
Exit Door Failure to Close	0=Exclude ▾	<input type="checkbox"/>	Temp 6 ▾
Pulse Simulator Turned On	0=Exclude ▾	<input type="checkbox"/>	none ▾
Gate Simulator Turned On	0=Exclude ▾	<input type="checkbox"/>	none ▾
The Storage Card Could Not be Read	0=Exclude ▾	<input type="checkbox"/>	none ▾
The Storage Card is Running Out of Memory	0=Exclude ▾	<input type="checkbox"/>	none ▾
The User File Could not be Read	0=Exclude ▾	<input type="checkbox"/>	none ▾
WashSoft Not Responding	0=Exclude ▾	<input type="checkbox"/>	none ▾
WashCode Not Responding	0=Exclude ▾	<input type="checkbox"/>	none ▾
The Bay Eye Has Failed	0=Exclude ▾	<input type="checkbox"/>	none ▾
PBS Not Responding	0=Exclude ▾	<input type="checkbox"/>	none ▾
Cortex Not Responding		<input type="checkbox"/>	none ▾
NIP9 Board Not Responding	0=Exclude ▾	<input type="checkbox"/>	none ▾
Rockwell I/O Rack Not Responding	0=Exclude ▾	<input type="checkbox"/>	none ▾
NIP30 Board Not Responding	0=Exclude ▾	<input type="checkbox"/>	none ▾
NIP30 Board Has Incompatible Firmware	0=Exclude ▾	<input type="checkbox"/>	none ▾
NIP30 Board Temperature	0=Exclude ▾	<input type="checkbox"/>	none ▾
Conveyor Stopped Because a Car Entered the Gate Without a Wash Package	0=Exclude ▾	<input type="checkbox"/>	none ▾
Conveyor Paused Because a Car Entered the Gate Without a Wash Package	0=Exclude ▾	<input type="checkbox"/>	none ▾
Exit Anti-collision Triggered	0=Exclude ▾	<input type="checkbox"/>	none ▾
Entrance Air Door Anti-collision Triggered	0=Exclude ▾	<input type="checkbox"/>	none ▾
Exit Air Door Anti-collision Triggered	5=Highest ▾	<input type="checkbox"/>	none ▾
A Roller was Called Up when the Entrance Door Was Not Ppen	0=Exclude ▾	<input type="checkbox"/>	none ▾
A Car Tried to Enter the Car Wash Through the Exit	0=Exclude ▾	<input type="checkbox"/>	none ▾
Vehicle Overheight at Entrance	0=Exclude ▾	<input type="checkbox"/>	none ▾
Maintenance Due	0=Exclude ▾	<input type="checkbox"/>	none ▾

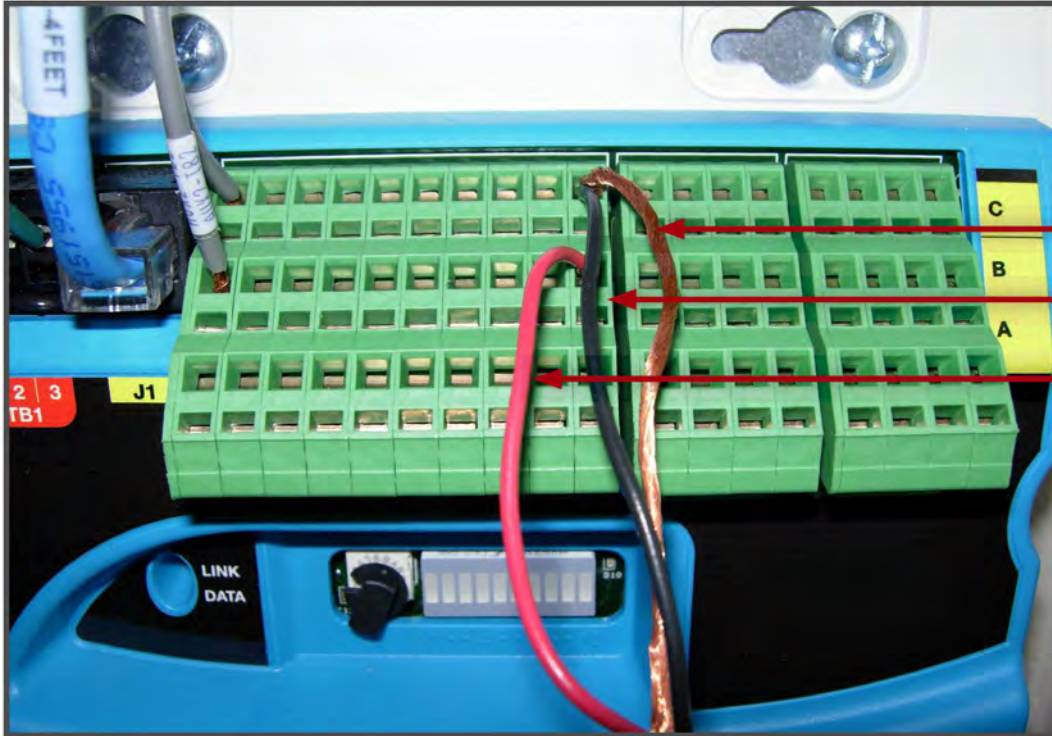
Notify By Email: If this check box is selected then a warning email will be sent out whenever this alert becomes active. For more information on emails **see page 110**. If your r-TC is not enabled to send emails then this option will not be visible.

centralACCESS: If your r-TC is connected to a centralACCESS server then any alerts that may arise on the r-TC will be reported to centralACCESS. Each alert has a level of importance assigned to it that will be displayed on the centralACCESS web page where **'one'** is the least important and **'five'** is most. Customize the alarms' levels to your liking. As well, if you do not wish an alert to be reported to centralACCESS at all, then set the alert to **'exclude'** If your r-TC is not connected to a centralACCESS server than this option will not be visible.

Signaller Equipment Output: This option will only be visible if an "Internal Alert Signaller" equipment type has been created on your system. Use the drop down boxes to assign which outputs of the Internal Alert Signaller equipment will be activated whenever each of the internal alert types are active. If you wish, the same output can be chosen for multiple internal Alerts.

Temperature Sensor r-TC Connections

In order to monitor temperature alerts a sensor must be installed. Please see the picture below for connection details.



SHIELD: TERM C (NEG)

BLACK: TERM C (NEG)

RED: TERM B (SIGNAL)

Ultrasonic Sensor r-TC Connections

Please see the picture below for connection details.



SHIELD: TERM C (NEG)

BLUE: TERM B (NEG)

BLACK: TERM A (SIGNAL)

Program Requests

If you are using inputs to select wash packages you will have to set up which inputs activate which wash packages.

Regular Mode ('Digital' check box not selected)

Click on the Add button to create a new program request input. To edit an existing program request click on the name of the wash program.



The screenshot shows a configuration form for a program request input. It contains the following fields: 'Wash Package:' with a dropdown menu showing 'Wash 1', 'Hardware:' with the text 'NIP 30', 'Input:' with a dropdown menu showing 'none', and 'Normally Closed:' with an unchecked checkbox.

Select the I/O node and input number where the input will be connected. Select the wash package associated to the input from the drop down box. Only wash packages that have the 'External' check box selected will be listed in the drop down box (**see page 71**)

Stacking: If stacking is enabled, each time a wash package input is activated, the r-TC will add a new car to the car wash's queue and assign the selected wash package to the car. If stacking is not enabled and a wash package input is activated, the r-TC will check if there is already a car in the queue that has not yet reached minimum car length in the wash. If there is an existing car then the r-TC will change the car's wash package based on the input activated. If there is not already an existing car then the r-TC will add a new car to the car wash's queue and assign the selected wash package to the car. In either case, if an option input is activated the option will be added to the last car in the queue.

Digital Mode

Select the **Digital** check box then click on the '**Apply**' button to refresh the page.

In digital mode input number one represents a binary one, input two represents a binary two, input three represents a binary four, etc. The binary sum of the active inputs will determine the wash package number selected. (**see the table on the next page**)

In digital mode if all the inputs are set on then the r-TC will delete all options assigned to the current vehicle and change its wash package to the Default wash package.

New car from teller is current car on PBS

This option is used to determine how the PBS reacts to a car being added to the queue from an external source (such as a Teller using relay inputs to select wash packages). The '**current car on PBS**' refers to the car in the queue that is currently selected at the PBS (the LED for this car will be flashing). If this check box is selected, then at the moment a new car is added to the queue, the PBS will automatically make this new car the '**current car on PBS**', the LED for this car will flash, and any options selected at the PBS will be applied to this vehicle.

If this check box is not selected then the '**current car on PBS**' will not automatically change as cars are added but will stay at whatever vehicle was last selected by the user at the PBS (most likely the car about to enter the wash).

Digital Mode Binary Table

Input 1	Input 2	Input 3	Input 4	Input 5	Wash Pkg
X					1
	X				2
X	X				3
		X			4
X		X			5
	X	X			6
X	X	X			7
			X		8
X			X		9
	X		X		10
X	X		X		11
		X	X		12
X		X	X		13
	X	X	X		14
X	X	X	X		15
				X	16
X				X	17
	X			X	18
X	X			X	19
		X		X	20
X		X		X	21
	X	X		X	22
X	X	X		X	23

PBS 4000

This page is used to assign functions to the PBS 4000's numeric key pad. There are 23 buttons on the PBS 4000 which can be assigned to wash packages, options, or to control various equipment of the car wash (e.g. open and close doors).



Every time a new wash package or option is created, the r-TC will try to automatically assign it a button on the PBS. You can simply leave these assignments as they are or use this web page to customize your PBS.

First select the PBS button to customize by clicking on it in the grid of buttons. The selected button will be highlighted in grey. Choose a function for the button by clicking on the function name.

To remove the functionality of a button, first select the button then click on the Clear button. The Clear All button will clear all functions from all the buttons of the PBS. The Reset All button will return the PBS buttons displayed to their currently saved state, use this button to undo any changes you've made since the web page was loaded.

Clear
Clear All
Reset All

Wash Package Fulfillment Report	No Pickup Retract	Release Latched Alerts	Mute the Alarm

Wash Packages
none

Reports
[Wash Package Fulfillment Report](#)

Retracts
[No Pickup Retract](#)

Alerts
[Release Latched Alerts](#)
[Mute the Alarm](#)

Overrides
[Enable Web Overrides](#)

Options

Sound an Alarm if an Alert is Active

Disallow the removal of a car from the queue on the second press of the "Clear Program" key

Sound an Alarm if an Alert is Active: If this feature is enabled then an audible alarm will sound at the PBS every time an alert is active. The operator can mute the alarm by using the **“Mute the Alarm”** button shown above.

Disallow the removal of a car from the queue on the second press of the “Clear Program” key: Typically if there is a wash already selected and the user presses the **“Clear Program”** key once, the wash package is changed to the default package and if the **“Clear Program”** key is pressed a second time then the car is completely removed from the queue. If this option is selected then the first key press acts as usual but the second key press has not effect, the car remains in the queue.

User Defined Inputs

This web page is used in conjunction with the r-TC’s interface to a teller or point of sale system. A teller or point of sale system may need access to the state of certain inputs. For more information please refer to the **‘r-TC Interface Control Document’**.

Add a User Defined Input

Click on the [Add] link to create an input. In order to accomplish this an input must first be given a unique name so that it can be correctly identified. The teller or point of sale system should then use this name to identify the input.

User Input 1 NIP 30 Board: 1 Input: 4 Normally Closed

Add Delete Back

Name: User Input 2

Hardware: NIP 30 Input: none Normally Closed:

Apply Submit Back

Delete a User Defined Input

Click ‘Delete’ at the bottom of the screen.

User Input 1 NIP 30 Board: 1 Input: 4 Normally Closed

Add Delete Back

User Input 1 ✖

Back

A list of the **User Defined Inputs** will appear, with a red **‘X’** next to each name. Click on the red **‘X’** to delete the input.

User Defined Sensor Types

The r-TC allows you to connect any kind of analog sensor that provides a voltage in the range of 0.0 to 5.0 volts, but if the sensor is connected to an analog input of a ECU 1911 then the voltage range is from 0 to 10 Volts. In order to remain flexible and support any kind of sensor we have included the ability to configure the r-TC for whatever sensor you would like to use.

User defined sensor types can be used to drive an alert and they can also be used to drive a switch.

Click on the **Add** button to create a new user defined sensor type.

A form titled 'Add a Sensor' with a red header. It contains several input fields: 'Name:' and 'Units:' are text boxes. Under the heading 'Calibration Points', there is a 'Number of Points:' dropdown menu set to '2'. Below this are two rows of calibration data, each with an 'Input Voltage:' field (set to '0.00' Volts) and a 'Measurement:' field (set to '0.000').

Name: Enter a name for the sensor type. This name will be used when you select which sensor type you want to use for an alert or for a switch.

Units: Enter the units of the physical value that the sensor type measures (for example; psi).

Calibration Points: A calibration curve is used to tell the r-TC exactly how the sensor's voltage varies with the physical value measured by the sensor. Up to ten calibration points can be configured. The r-TC will interpolate linearly between the points and will extrapolate linearly outside the range of the calibration points.

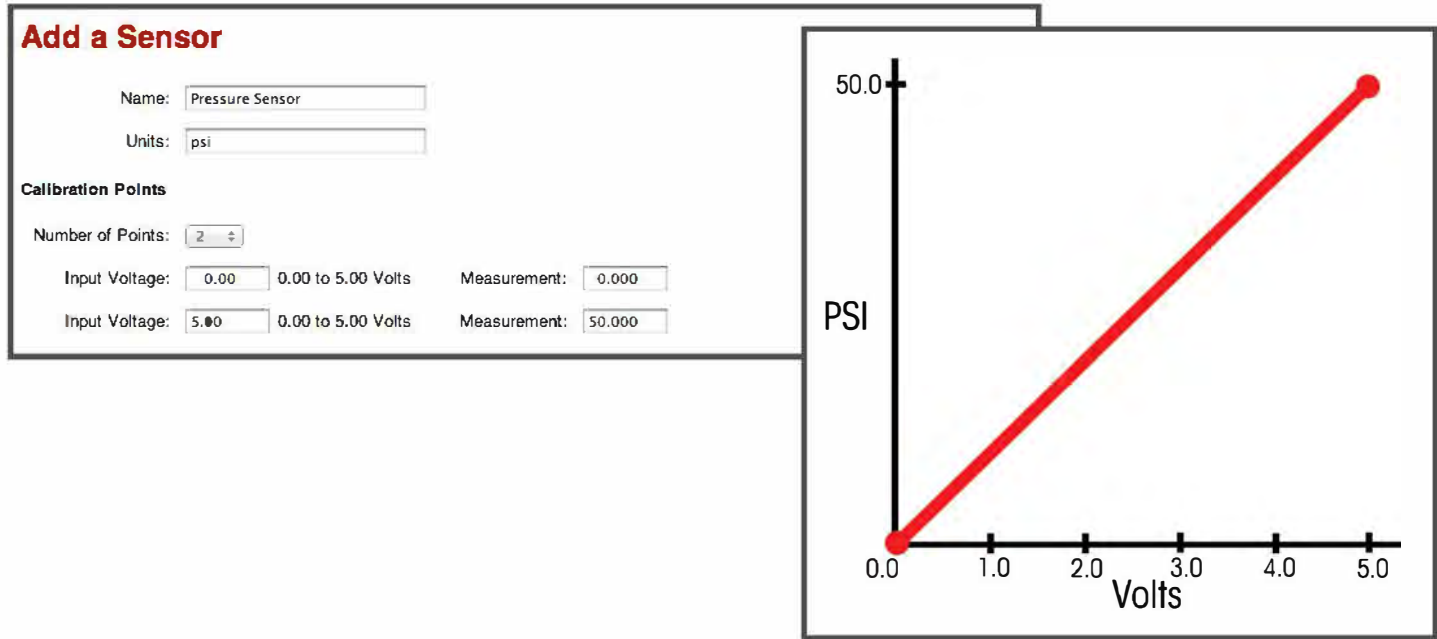
Number of Points: Use this control to set the number of points in the calibration curve. Most sensors will be linear and only two calibration points will be necessary.

Input Voltage: Enter the voltage provided by the analog sensor for this particular calibration point.

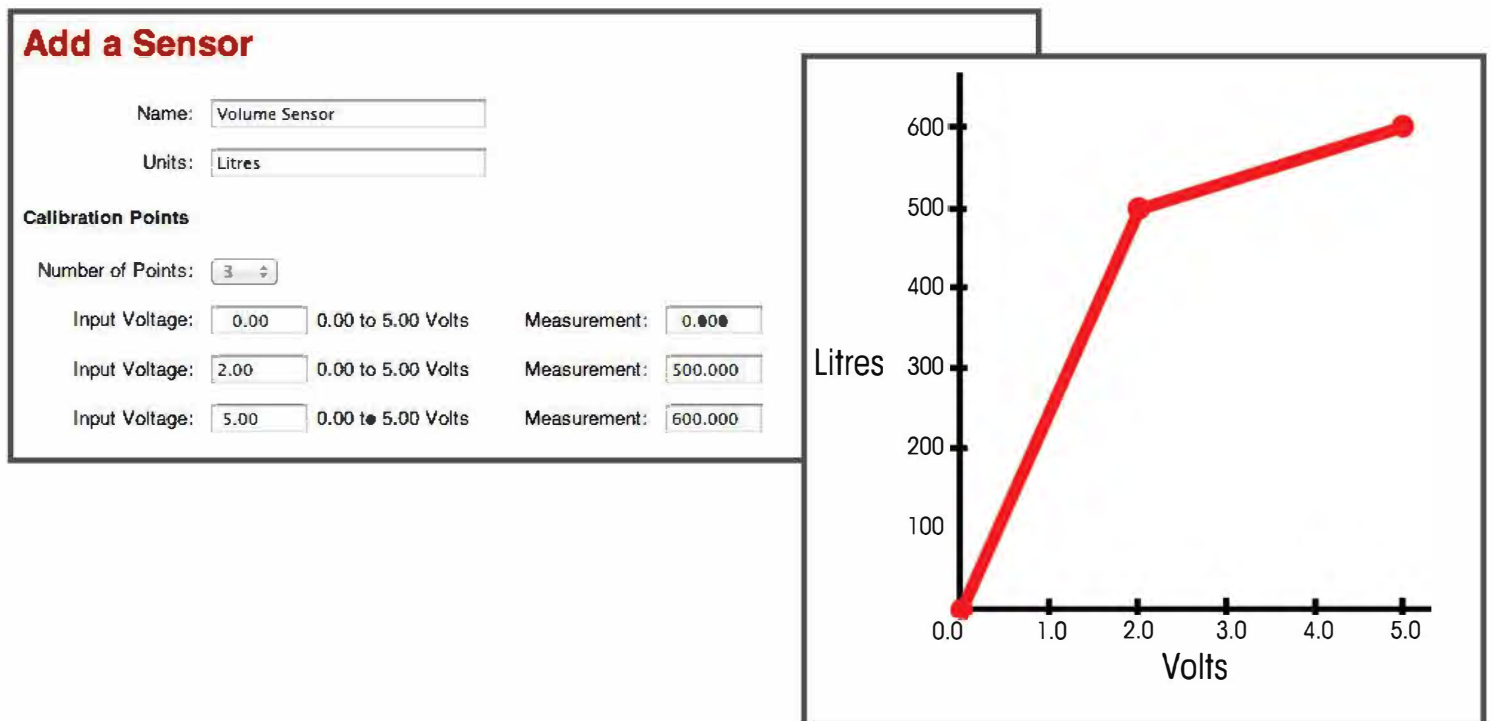
Measurement: Enter actual physical quantity the sensor is measuring at this voltage. The value entered should be in the same units that you entered above.

Examples:

For a simple linear calibration only two calibration points are needed.



A sensor can be set up which follows a complicated curve.



Ultrasonic Sensors

If a Laguna Industries ultrasonic sensor is going to be used then it is still necessary to create a **User Defined Sensor Type** for this sensor. This was done in order to remain flexible so that an ul-trasonic sensor could be used as simple distance measuring device, or it could be configured to measure the volume of an irregularly shaped chemical tank.

The ultrasonic sensor provides a voltage in the range of **0.0 to 5.0 volts** corresponding to **0 to 9m**. The sensor has an operating range of **0.04m to 9m**

Setup for Simple Distance Measuring Ultrasonic Sensor

Add a Sensor

Name:

Units:

Calibration Points

Number of Points:

Input Voltage:	<input type="text" value="0.00"/>	0.00 to 5.00 Volts	Measurement:	<input type="text" value="0.000"/>
Input Voltage:	<input type="text" value="5.00"/>	0.00 to 5.00 Volts	Measurement:	<input type="text" value="900.000"/>

I/O Node Temperature Limits

This page is used to assign temperature limits to an I/O node. If a node temperature exceeds the configured settings a warning will be displayed on the Status section of your home page and in the Car Wash History.

Use the Same Temperature Limits for all of the I/O Nodes:

Low Limit: Celsius

High Limit: Celsius

Vehicle Profiler

The Vehicle Profiler uses an ultrasonic sensor to measure the height and shape of each vehicle. If an open pickup truck bed is detected then certain equipment will be either retracted or turned off over the bed. The Vehicle Profiler can also be used with the Variable Speed Motor equipment type to vary the strength of an output with the height of a car. For example, if a high pressure arch is being used then the actual liquid pressure could be lowered as the roof of a vehicle passes under the nozzles and increased for lower parts of the car such as the hood and trunk.

Sensor Location: <input type="text" value="0"/> cm	
Sensor Height: <input type="text" value="0"/> cm	
Node: <input type="text" value="none"/>	Input: <input type="text" value="none"/>

Sensor Location: The distance of the ultrasonic sensor from the gate.

Sensor Height: The height of the ultrasonic sensor measured from the ground.

Node: The I/O node to which the ultrasonic sensor is connected.

Input: Select the Ultrasonic sensor used for the Vehicle Profiler (1 to 4).

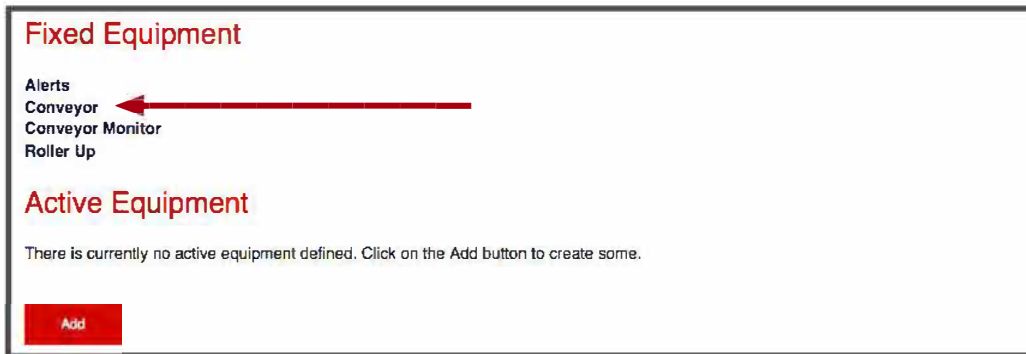
Equipment

The **Equipment** web page is used to setup and configure the equipment of your car wash.

The equipment of the car wash is separated into four groups. **Fixed equipment** refers to equipment that applies to the car wash as a whole as opposed to equipment that is used to wash a car, for example the conveyor, the roller up, doors, etc. **Vending equipment** is coin-based equipment apart from the tunnel wash such as vacuums. **Active equipment** is equipment that is used specifically for washing and that could be included or not included in a wash package. **Pumps** refers to **variable speed motors** and other types of pumps.

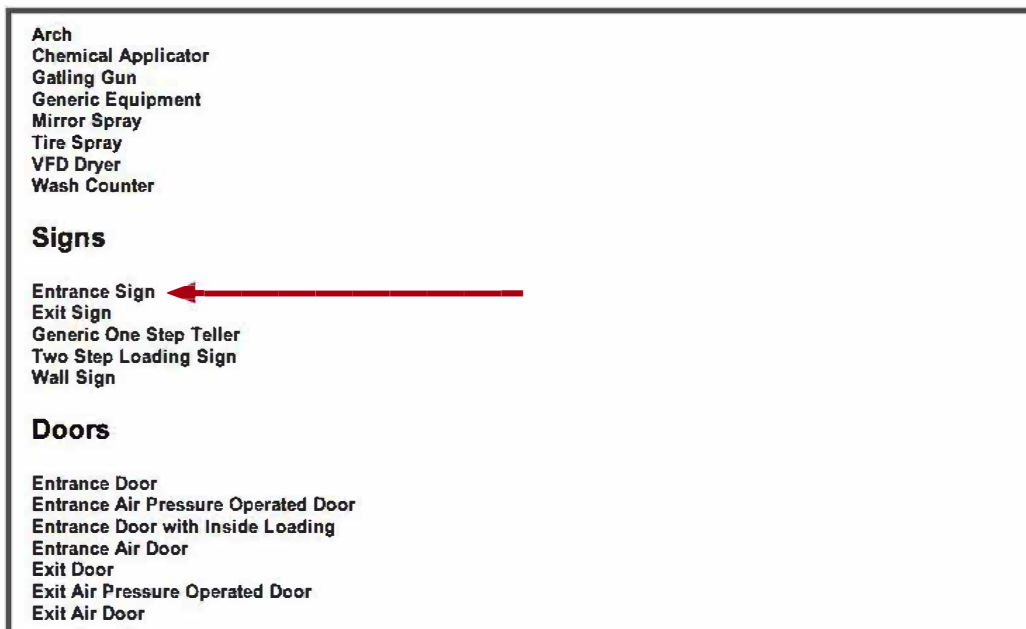
Fixed Equipment

Three pieces of fixed equipment are always part of the car wash and are added to the fixed equipment list by default. They are the **alerts, roller up** and **conveyor**. Each of these pieces of equipment has several configurable parameters that can be set or modified. For example, to view or modify the conveyor's setup, click on the conveyor link on the **Equipment** page. Use this page to setup the conveyor then click on **'Apply'** or **'Submit'** to save your changes.



Adding a Piece of Equipment

To add a new piece of equipment, first return to the main equipment page by clicking on the link in the main header. Click on the **Add** button at the bottom of the page.



Select the type of equipment you would like to add by clicking on its name, for example an entrance sign. Clicking on the link will take you to the **Entrance Sign** setup page.

Name:

Outputs

Hardware: NIP 30	Relay: Entrance Sign 1 (1,4)
Hardware: NIP 30	Relay: none
Hardware: NIP 30	Relay: none
Hardware: NIP 30	Relay: none
Hardware: NIP 30	Relay: none
Hardware: NIP 30	Relay: none

[+ User Manual](#)

You must give each piece of active equipment a unique name. Enter the name and select the outputs then click on **Submit** or **Apply** to save your changes. This new piece of equipment will now appear in the list of Active equipment on the main equipment web page.

Click on the User Manual link to show/hide more detailed descriptions of this piece of equipment and its settings.

Modifying a Piece of Equipment

To change any of the values you previously set for this piece of equipment, click on its name in the **Active Equipment** list to bring you back to its setup page. Change any value you like then click on '**Submit**' or '**Apply**' to make the changes permanent.

Deleting a Piece of Equipment

To delete a new piece of equipment, first return to the main equipment page by clicking on the '**Equipment**' link in the main header. Click on the **Delete** button at the bottom of the page.

A red '**X**' will appear next to each piece of equipment that can be deleted. Simply click on the red '**X**' to delete the piece of equipment.

Setting Up Your Schedule

The r-TC allows you to automate some aspects of your car wash that change depending on the time of day. For example, the opening hours of the car wash can be set up. Outside of these hours the doors will be closed automatically and car wash signs will show the wash as closed. To accomplish this the r-TC uses schedules.

The first step in using schedules is to create a new schedule and give it a name. Click on the **Add/Edit/Delete** Schedules link in the Schedules menu. Click on the **Add** button to create a new schedule.

Enter a name for the schedule. Click on the hourly blocks to turn the schedule on or off for that hour. **Green = On** and **Black = Off**. Click on **'Apply'** or **'Submit'** to save your changes.

Note: For **High/Low** pricing **Green = Low** and **Black = High**

Name:

Set the On/Off times for this schedule by clicking on the hour blocks. Green = On, Black = Off.

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
0:00 - 0:59							
1:00 - 1:59							
2:00 - 2:59							
3:00 - 3:59							
4:00 - 4:59							
5:00 - 5:59							
6:00 - 6:59							
7:00 - 7:59							
8:00 - 8:59							
9:00 - 9:59							
10:00 - 10:59							
11:00 - 11:59							
12:00 - 12:59							
13:00 - 13:59							
14:00 - 14:59							
15:00 - 15:59							
16:00 - 16:59							
17:00 - 17:59							
18:00 - 18:59							
19:00 - 19:59							
20:00 - 20:59							
21:00 - 21:59							
22:00 - 22:59							
23:00 - 23:59							

So far we have created is a schedule that has times of day where the schedule is on or off but we have not yet decided what aspect of the car wash is going to be controlled by the schedule. This is done so that the same schedule could possibly be applied to more than one aspect of the car wash. As well, if the schedule can change, it is possible to program up several schedules for the same aspect of the car wash then swap them when needed (for example different opening hours might be used during summer and winter).

Opening Hours

This feature allows you to define the opening hours of your car wash. Outside of these hours the doors will be closed automatically and car wash signs will show the wash as closed.

To set up the opening hours for your car wash click on the Opening Hours link in Schedules menu. Pick the desired schedule from the drop down box. Click on **'Apply'** or **'Submit'** to save your changes.

A screenshot of a web form for setting opening hours. It features a dropdown menu labeled "Schedule:" with "Special Week" selected. The dropdown is open, showing options for "none" and "Holiday Hours". Below the dropdown is a red button labeled "Apply".

High/Low Pricing

This schedule allows you to charge lower prices for washes during certain hours. The schedule defines the hours in which the low price will be used. Each wash package must be assigned a regular price and a low price (please see the **'Wash Packages'** web page).

To set up the **High/Low** hours for your car wash click on the High/Low Pricing link in Schedules menu. Pick the desired schedule from the drop down box. Click on **'Apply'** or **'Submit'** to save your changes.

A screenshot of a web form for High/Low Pricing. It features a dropdown menu labeled "Schedule:" with "Special Week" selected. Below the dropdown are two red buttons: "Apply" and "Submit".

Pre-paid Lockout Hours

During these hours Pre-paid customers will not be allowed to redeem their washes. It is possible to exempt a specific pre-paid customer from this restriction (please see the 'Pre-paid Customers' web page).

If you do not want pre-paid customers to be restricted then simply select **"none"** as the schedule.

To set up the Pre-paid Lockout Hours for your car wash click on the Pre-paid Lockout Hours link in Schedules menu. Pick the desired schedule from the drop down box. Click on **'Apply'** or **'Submit'** to save your changes.

A screenshot of a web form for Pre-paid Lockout Hours. It features a dropdown menu labeled "Schedule:" with "Special Week" selected. Below the dropdown are two red buttons: "Apply" and "Submit".

Maintenance

The **Maintenance** web page is used to setup and configure the maintenance schedule for your car wash equipment.

Maintenance Setup

The Maintenance setup page is used to add new tasks or modify existing ones.

There are currently no maintenance tasks defined. Click on the [Add] link to create some.

Add

Adding a Task

To add a new Task first click on the button at the bottom of the page.

Action:

Car Wash Equipment

Equipment:

If you select 'none' as the equipment, then cycles will be based on the number of cars washed and run-time will be based on the conveyor's run-time.

Maintenance Frequency

Due after: days

Overdue after: days

Due after: cycles

Overdue after: cycles

Due after: hours

Overdue after: hours

Leave any 'frequency' that should not be used blank.

Optional Help Document

Document:

Action: The action a technician needs to perform when the maintenance task is due.

Car Wash Equipment: The name of the equipment to which the maintenance task applies. If you select 'none' as the equipment, then cycles will be based on the number of cars washed and run-time will be based on the conveyor's run-time.

Maintenance Frequency: Use this section to setup how often the maintenance task needs to be performed. The frequency can be based on the number of days since the maintenance task was last performed, the number of power cycles the equipment has undergone, the amount of time the equipment has run, or any combination of these three types. The 'Due' parameters simply indicate how often the maintenance task needs to be performed. The 'Overdue' parameters is used to indicate when the maintenance task should be considered critical.

The 'Overdue' parameter must be greater than the 'Due' parameter. If more than one type of frequency is used, then the state of the maintenance task will be determined based on which frequency type is greater as a percentage of the parameter. In other words, a "whichever comes first" approach is used.

Optional Help Document: It is possible to upload help documents to the r-TC explaining the maintenance task to be performed. If a document is uploaded then assigned to a task, a link to the document will appear next to the task in the Maintenance Schedule web page.

Modifying a Maintenance Task

To change any of the values you previously set for this maintenance task, click on its name in the maintenance task list to bring you back to its setup page. Change any value you like then click on **'Apply'** or **'Submit'** to make the changes permanent.


Deleting a Task

To delete an event, first return to the **'Setup'** web page in Maintenance. Click on the **Delete** button at the bottom of the page.

A red **'X'** will appear next to each event that can be deleted. Simply click on the red **'X'** to delete the piece of equipment.

Maintenance Schedule

This web page will allow you to view all scheduled maintenance tasks, whether they are due, overdue, upcoming or nonpending. The initial page will show the due tasks, it will display the **Action, Equipment, Percentage** and a **Done** checkbox.

IF THIS SETTING IS CHOSEN BY THE USER, you will notice this  icon next to the checkbox. If you click on the icon, it will bring up a **pdf file**, which you can design.

For Example: A graphic diagram with instructions on how to maintain this piece of equipment.

Action	Equipment	Percent	Done	
Description of event number 1	Custom Arch	100%	<input type="checkbox"/>	 ←
Test 1	Custom Tire Brush	100%	<input type="checkbox"/>	
Test 2	Water Spray	100%	<input type="checkbox"/>	

To view all scheduled maintenance, whether its due, overdue, upcoming or non-pending click on the **Show All** button at the bottom of the page. A task is considered **'Upcoming'** if it has reached **80%**.

Overdue Tasks			
Action	Equipment	Percent	Done
Test 2	Water Spray	175%	<input type="checkbox"/>

Upcoming Tasks			
Action	Equipment	Percent	Done
Description of event number 1	Custom Arch	75%	<input type="checkbox"/>
Description of event number 2	Custom Arch	88%	<input type="checkbox"/>
Test 1	Custom Tire Brush	75%	<input type="checkbox"/>
Description of event number 2	Custom Tire Brush	88%	<input type="checkbox"/>
Test Service 2	Water Spray	88%	<input type="checkbox"/>

Non-Pending Tasks			
Action	Equipment	Percent	Done
Description of event number 3	Custom Arch	44%	<input type="checkbox"/>
Description of event number 3	Custom Tire Brush	44%	<input type="checkbox"/>
Test Service 3	Water Spray	44%	<input type="checkbox"/>

Action

To view details about the maintenance schedule for a particular task, click on the appropriate **'Action'** link.

After clicking the **'Action'** link the following web page will appear with detailed maintenance information.

Detailed Maintenance Information

Action: Description of event number 1

Equipment Name: Custom Arch

Documentation: [Event1.pdf](#)

Date Based Maintenance

Last Maintenance: 4 days ago, 100%

Maintenance Due After: 4 days

Maintenance Overdue After: 6 days

Cycle Based Maintenance

Since Last Maintenance: 0 cycles, 0%

Maintenance Due After: 5 cycles

Maintenance Overdue After: 10 cycles






Run-Time Based Maintenance

Since Last Maintenance: 0 minutes, 0%

Maintenance Due After: 1 hour

Maintenance Overdue After: 2 hours

Click **'Back'** to return to the **'Maintenance Schedule'** page

Action	Equipment	Percent	Done
Description of event number 1	Custom Arch	125%	<input checked="" type="checkbox"/> 
Description of event number 2	Custom Arch	113%	<input checked="" type="checkbox"/> 
Test 1	Custom Tire Brush	125%	<input checked="" type="checkbox"/> 
Description of event number 2	Custom Tire Brush	113%	<input type="checkbox"/> 
Test Service 2	Water Spray	113%	<input type="checkbox"/> 

To view a detailed description of the maintenance schedule of one of the tasks, click on the action.

Once the maintenance tasks have been completed, check off the **'Done'** checkboxes and hit **'Submit'** at the bottom of the page. This will take you to the **'Summary of Maintenance Tasks Completed'** web page.

Action	Equipment	Percent	Days	Cycles	Hours
Description of event number 1	Custom Arch	125%	5	0	0
Description of event number 2	Custom Arch	113%	9	0	0
Test 1	Custom Tire Brush	125%	5	0	0

Maintenance History

The maintenance history will detail which **user** completed the **task**, **date** and **time**.

Aug 10 2007 - 19:05:56: Maintenance completed by Daryl.

Action	Equipment	Percent	Days	Cycles	Hours
Description of event number 1	Custom Arch	125%	5	0	0
Description of event number 2	Custom Arch	113%	9	0	0
Test 1	Custom Tire Brush	125%	5	0	0

Aug 08 2007 - 13:27:06: Maintenance completed by Daryl.

Action	Equipment	Percent	Days	Cycles	Hours
Test 2	Water Spray	175%	7	0	0

Aug 05 2007 - 13:25:48: Maintenance completed by Daryl.

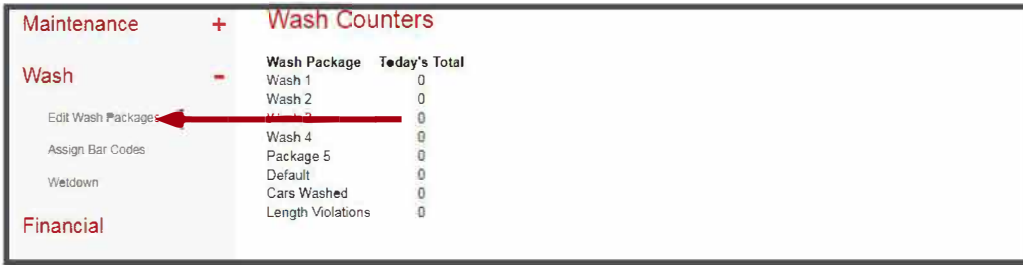
Action	Equipment	Percent	Days	Cycles	Hours
Description of event number 1	Custom Arch	100%	4	0	0
Test 1	Custom Tire Brush	100%	4	0	0

Aug 01 2007 - 12:54:26: Maintenance completed by Daryl.

Action	Equipment	Percent	Days	Cycles	Hours
Description of event number 1	Custom Arch	25875%	1035	0	0
Description of event number 2	Custom Arch	12938%	1035	0	0
Description of event number 3	Custom Arch	6531%	1045	0	0
Test 1	Custom Tire Brush	25875%	1035	0	0
Description of event number 2	Custom Tire Brush	12938%	1035	0	0
Description of event number 3	Custom Tire Brush	6506%	1041	0	0
Test 1	Water Spray	25875%	1035	0	0
Test Service 2	Water Spray	12938%	1035	0	0
Test Service 3	Water Spray	6506%	1041	0	0

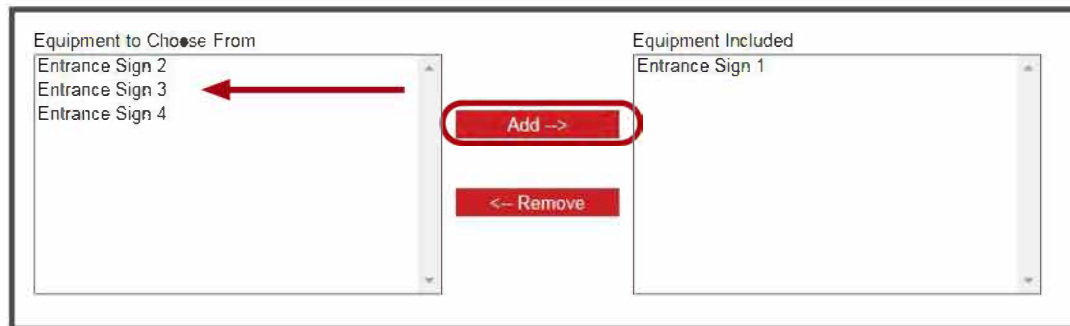
Setting Up Your Basic Package

The **'Edit Wash Packages'** web page is used to setup and configure your wash packages. You can find the link for **'Edit Wash Packages'** under **'Wash'** in the main menu.



Select **'Basic'** from Fixed Wash Packages menu. The The basic package includes a list of equipment that will be included in all wash packages. You should add the pieces of equipment to this list that will be applied to every car, no matter which wash package has been purchased.

The first step is to click on the **'Basic'** link which will bring you to a new window that displays the equipment included in the basic package. **NOTE:** The services are listed in the order in which they appear in the bay.



In this menu you can add or remove services by clicking a piece of equipment and using the **Add ->** or **<- Remove** commands.

In the **Left Box** are pieces of equipment that are **not already included** in the **Basic Package** , the box on the right are pieces of equipment that are already included in the **'Basic'** package.

Adding a Piece of Equipment

Clicking on one of the services In the left hand box and selecting **Add ->** will move the piece of equipment to the right hand box. Repeat the process to add another piece of equipment to the **Basic Package**.

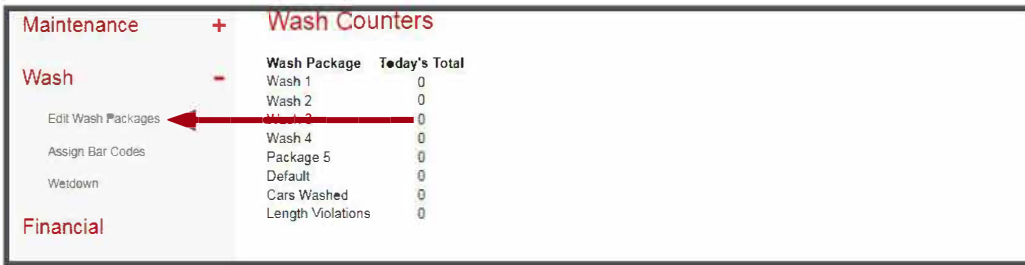
Removing a Piece of Equipment

To remove a piece of equipment from the Basic Package, select one of the pieces of equipment listed in the right hand box and select **<- Remove** This will remove the piece of equipment from the list to the left hand box. Repeat the process to remove another piece of equipment from the **Basic Package**.

When finished, click on **'Apply'** or **'Submit'** and the bottom of the page to save any changes.

Setting Up Your Wash Packages

The **'Edit Wash Packages'** web page is used to setup and configure your wash packages. You can find the link for **'Edit Wash Packages'** under **'Wash'** in the main menu.



Select the **'Edit Wash Packages'** to view all of you wash packages.

The first step is adding a Wash Package. Click on the **Add** button at the bottom of the page.

In the **'Add'** screen select **'Add Wash Package'**.



Wash Number: 1

Name: Wash 1

Price: 10.00 \$

PBS 4000 #1: Auto Start:

PBS 4000 #2: Auto Roller:

PBS 5000: Extended Length:

External:

Ethernet:

Equipment to Choose From: Entrance Sign 2, Entrance Sign 3, Entrance Sign 4

Equipment Included: Entrance Sign 1

Buttons: Add ->, <- Remove

Give the package a **name** and assign a **price** to the wash, next check off the boxes that will define your wash package;

Wash Number: Select a number from the drop down box to assign to this wash package

PBS 4000: The PBS 4000 is an optional keypad usually located at the entrance of the car wash. By Checking off this box you allow this wash package to be controlled/started by the PBS 4000. Some systems may have two PBS 4000's. In this case two check boxes will be displayed. This allows you to determine at which PBS 4000 this wash package can be controlled/started. Some operators may want the wash package to be available at both PBS 4000's, others may want the wash package to available at only one of the PBS 4000's.

External: By checking off this box you allow this wash package be controlled/started by an external input (i.e. a physical relay) from a teller system.

Ehernet: By checking off this box you allow this wash package be controlled/started by software running or another computer (such as WashSoft or an Access Teller).

Auto Start: If this box is checked off the r-TC will automatically start the conveyor whenever it receives this wash package. This is generally used for customer Self Loading.

Auto Roller: If This box is checked off the r-TC will automatically start a roller sequence whenever it receives this wash package. This selection is mostly used for one step Customer Self Loading car washes. For this option to work properly, the car should already be on the conveyor when the wash package is selected.

Extended Length: If this box is checked off the wash package is intended specifically for larger vehicles such as a limousine. This allows the measure eye to process a limousine car without generating an alert.

centralACCESS Product: This drop down box only applies if centralACCESS is being used to track financial data. The drop down box displays all the products that have been entered into centralACCESS. Select from the drop down box the specific centralACCESS product that corresponds to this type of wash package.

After selecting your check boxes, select which piece of equipment you wish to add to your wash package.

Note: The Basic Package will always be included. You can add or remove additional services as you like.

You can add or remove equipment by clicking a piece of equipment and using the **Add ->** or **<- Remove** commands.

In the **left box** are pieces of equipment that are **not included** in the **wash package**, the box on the right are pieces of equipment that are already included in the wash package.

Setting Up Your Options

Options are used to add/remove equipment to/from a wash package. An option is always used with a wash package, that is, for every vehicle, the wash that the vehicle receives will be determined by a wash package, and any number of additional options that are selected for the vehicle. Many options can be selected for a vehicle, but only one wash package is selected per vehicle.

Setting up an option is very similar to setting up a wash package.

- Click on the **'Wash'** link in the main menu..
- Select the **'Edit Wash Packages'** to view all of you wash packages.
- Click the **'Add'** button at the bottom of the page.
- Click **'Add an Option'**
- The first steps in setting up your **'option'** are assigning it a Wash Number and a name.
- Give the option a price.
- Next step is checking off the boxes that will define your **'option'**'.

The check boxes act similarly as for a wash package.

After selecting check boxes select which pieces of equipment to include or exclude to/from the wash package.

The **'Equipment Included'** list shows the equipment that will be included with the wash in addition to those of the wash package selected for that vehicle.

The **'Equipment Excluded'** list shows the equipment that will not be applied to the vehicle, even if they are included in the wash package selected for that vehicle.

For example let's assume you have a service called **'Tire Cleaner Neon'** which is included in your Basic Wash Package. You may want to have an option that excludes the **'Tire Cleaner Neon'** for certain vehicles. You can accomplish this by creating an option, please see the following steps below.

Create a new option called **'White Wall'**. The next step is to add it to the **'Equipment Excluded'**.

Wash Number: 8
Name: White Wall Option
Price: 2.00 \$

PBS 4000: Extended Length:
External:
Ethernet:

Equipment to Choose From
Testing Arch 2 Wash Service
Testing Arch 3 Wash Service
Testing Arch 4 Wash Service
Testing Arch 5 Wash Service
Tire Cleaner Neon Wash Service

Equipment Included
Testing Arch Wash Service

Equipment to Choose From
Testing Arch Wash Service
Testing Arch 2 Wash Service
Testing Arch 3 Wash Service
Testing Arch 4 Wash Service
Testing Arch 5 Wash Service

Equipment Excluded
Tire Cleaner Neon Wash Service

Select **'Tire Cleaner Neon'** from the **'Equipment to Choose From'** and **'Add ->'** it to the **'Equipment Excluded'** box.

Click on **'Apply'** or **'Submit'** to save the option.

Setting Up Your Coupons

Coupons are used to reduce the price of a wash package based on some sort of promotion. A coupon is always used with a wash package. If a coupon is selected for a specific vehicle, the price of that wash will be reduced by the amount of the coupon. This change will be reflected in all financial reports and on the customer's receipt.

Setting up a coupon is very similar to setting up a wash package.

- Click on the **'Wash'** link in the main menu..
- Select the **'Edit Wash Packages'** to view all of you wash packages.
- Click the **'Add'** button at the bottom of the page.
- Click **'Add an Coupon'**
- The first steps in setting up your **'Coupon'** are assigning it a Wash Number and a name.
- Give the coupon a price (the amount to be discounted as a positive value).
- Check off the boxes that will define your **'Coupon'**

The check boxes act similarly as for a wash package.

Setting Up Your Default Package

In the unlikely event that a car enters the car wash without a wash package assigned to it, the Default Package will be used to wash the vehicle. Generally the Default Package is set up to give the minimum services required so that the vehicle is washed and not damaged by the car wash equipment.

The Default Wash Package is set up similarly to the other wash packages. The only difference is that the equipment included in the Basic Package are not included in the Default Package as they are with the regular wash packages. This allows you to set up a Default Package that may contain fewer pieces of equipment then even the Basic Package.

- Click on the **'Wash'** link in the main menu..
- Select the **'Edit Wash Packages'** to view all of you wash packages.
- Click on the **'Default'** link in the **Fixed Wash Packages** menu.
- **Add or Remove** Pieces of Equipment to the Default Package the same way you did for the regular wash packages.
- If you are charging customers for the default package then enter a price, otherwise enter zero for the price.

Setting Up Your Wetdown Package

Wetdown is the process by which the equipment is soaked and prepared for washing cars. If the brushes dry out before a car is washed it can cause damage to a vehicle. The Wetdown Package is used to set up the equipment that should be turned on during the wetdown process.

- Click on the **'Wash'** link in the main menu..
- Select the **'Edit Wash Packages'** to view all of you wash packages.
- Click on the **'Wetdown'** link in the **Fixed Wash Packages** menu.
- **Add or Remove** pieces of equipment to the Wetdown Package the same way you did for the regular wash packages.

The wetdown can be started from the PBS 4000 or from a relay.

Setting Up Your Free Washes

A free wash is like an option but all it does is make the wash free. A free wash is always used with a wash package. If a free wash is selected for a specific vehicle, the price of that wash will be zero. This change will be reflected in all financial reports and on the customer's receipt. Setting up a free wash is very similar to setting up a wash package.

- Click on the **'Wash'** link in the main menu.
- Select the **'Edit Wash Packages'** to view all of you wash packages.
- Click **'Add a Free Wash'**.
- First steps in setting up your **Free Wash** are assigning it a **Wash Number** and a **Name**.
- Check off the boxes that will define your **'Free Wash'**.

The check boxes act similarly as for a wash package.

Setting Up Your Wetdown

Wetdown Settings

Run time: seconds

Automatic Wetdown

Enable automatic wetdown:

Automatically run wetdown after: minutes of inactivity

Only start the wetdown when a car arrives at the car wash (if the wash has been inactive for the set amount of time)

Start wetdown whenever car wash has been inactive for the set amount of time

Please be careful using the automatic wetdown! For safety reasons the entrance and exit doors of the car wash will open automatically whenever the automatic wetdown begins. If the doors are in "Summer Mode" then the doors will remain open until the car wash closes. in "Winter Mode" the doors will close automatically at the end of the wetdown.

Run Time: Whenever the Wetdown is started it will automatically stop after this amount of time.

Enable automatic wetdown: If this feature is enabled the r-TC will automatically start the wetdown after the assigned number of minutes since the last wetdown or car was washed.

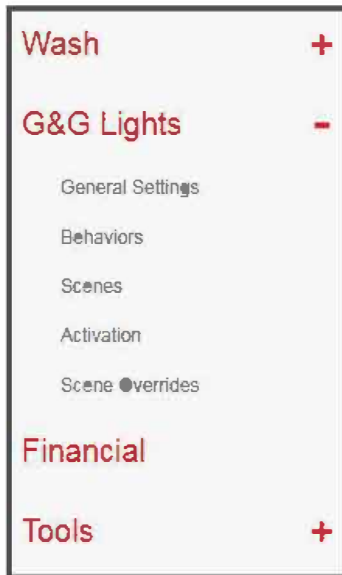
Automatically run wetdown after ___minutes of inactivity: Use this to set the amount of time that the car wash is idle after which a wetdown will be required.

Only start the wetdown after ___minutes of inactivity: If this option is selected then the automatic wetdown will be performed at the moment when a car arrives at the wash (if the car wash has been idle for the time set above). The rollers for the car arriving at the wash will not be called up until the wetdown has completed.

Start wetdown whenever car wash has been inactive for the set amount of time: If this option is selected then the wetdown will start automatically any time the car wash has been idle for the time set above. If the car wash is controlling doors then for safety reasons the doors will be opened every time the wetdown is performed. The automatic wetdown will not occur outside of the 'Opening Hours' of the car wash. In order to choose this option it is mandatory that 'Opening hours' be set for the car wash.

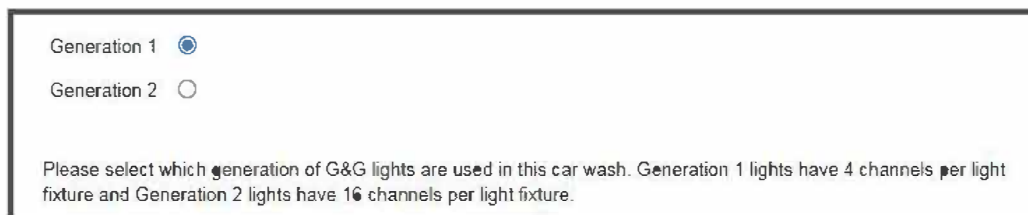
Setting Up Your G&G Lights

The r-TC is capable of controlling and animating LED light bars manufactured by the G&G Industrial Lighting Company. Typically these lights would be used to produce a multicolored show for customers. Lights can be activated as the car passes a certain position in the bay, by an input, or by a PBS button. Lights can also be activated according to a schedule.



General Settings

G&G has produced two generations of car wash lighting equipment. Use this web page to select which generation of lighting you have at your car wash. The r-TC is not capable of controlling both types simultaneously. G&G does produce the equipment that will switch a light from one generation to the other.



Behaviors

Use this section to set up your Light Behaviors. A Light Behavior is what any one light might be doing at any one time. For example, it might simply be on, displaying a color at a certain brightness. It might be pulsing a certain color at a certain frequency. It might be cross fading from one color to another. Four Light behaviors have been created by default.

Steady

Steady Blue
Steady Green
Steady Red
Steady White

Click on the name of the Light Behavior to edit its settings. Click on the Add Button to create a new Light Behavior.

Select the type of behavior you would like to add.

Steady
Pulsing
Cross Fade

The r-TC supports three different Light Behaviors.

Steady: the light will simply be on, showing a selected color at a selected brightness.

Pulsing: The light will brighten and dim continuously.

Cross Fade: The light will fade back and forth between two different colors.

The settings for these behaviors are explained in detail in the r-TC web interface.

Scenes

A Scene is what is actually turned on and off by the r-TC. A Scene is where you will assign Light Behaviors to specific light fixtures. A scene could be as simple as one light fixture displaying a Light Behavior, or it could include several groups of lights all displaying different behaviors.

Light Fixture ID's: Each light fixture from G&G will have a unique Fixture ID. This will be shown on a sticker on the light fixture.



One Light Scene has been created by default. This scene will turn on light fixtures #1 to #8 with a bright white light. This scene is intended as an example of how to illuminate the carwash bay when maintenance is being performed.

Lights 1-8 Bright White

Use Light Scenes to assign Behaviors to specific light fixtures.

Click on the name of the Light Behavior to edit its settings. Click on the Add Button to create a new Light Behavior.

Name:

Number of Light Behavior Groups:

Fixture ID #s: Use commas, example: 4,5,6,7

Behavior:

Fixture ID #s: Use commas, example: 4,5,6,7

Behavior:

Select the number of Light Behavior groups for your scene. A group is a collection of light fixtures all displaying the same behavior. For each group set the Fixture ID's of all the lights in the group and select the behavior that all these lights will display.

Activation

Setting up the activation of your light scenes is very similar to setting up the Equipment in your carwash. The Light Activation Equipment is divided into two groups. Active Light Equipment is for scenes that are to be activated as cars pass certain positions in the car wash. Fixed Light Equipment is for all other Light Activation Equipment (switch controlled, schedule controlled, etc.).

Fixed Light Equipment

E-Stop
Bay Empty
Cars in the Bay

Active Light Equipment

none

There are three Fixed Light Equipments that exist by default.

E-Stop: Light Scenes will be activated any time the E-Stop is activated. For example, all the lights could be set to white at full brightness to illuminate the car wash bay.

Bay Empty: Light Scenes will be activated any time the car wash bay is empty. The car wash bay is considered to be “empty” when no cars have yet reached the Gate eye.

Cars in the Bay: Light Scenes will be activated any time there are cars in the wash bay. A car is not considered to be “in the bay” until it has reached the Gate eye.

The remaining Light Activation Equipment type are described in detail in the r-TC's web interface.

If any one light fixture is being activated by more than one method, then the r-TC will prioritize as follows.

- E-Stop (top priority)
- Active Light Equipment
- Fixed Light Equipment
- Bay Empty/Cars in Bay

Scene Overrides

The Scene Overrides can be used to test specific Light Scenes. Simply click on the button with the name of the light scene you would like to force on.



The screenshot shows a rectangular panel with three buttons stacked vertically. The top button is white with the text "All Overrides Off". The middle button is green with the text "My Light Scene". The bottom button is white with the text "Lights 1-8 Bright White".

Assign Bar Codes

UPC/Bar codes can be assigned to the receipts printed at the thermal printer. Once the receipt is printed, the user can no longer add options that cost money to a vehicle.



The screenshot shows a rectangular menu with the following text: "Change Type of Bar Codes Used", "Input or Modify the Bar Codes", and "Setup the Interface to a Bar Code Reader".

Change Type of Bar Code Used

You may select between regular Bar Code or UPC-A Bar Code.



The screenshot shows a rectangular panel with two radio button options. The first option is "Regular Bar Code" with a selected radio button. The second option is "UPC-A Bar Code" with an unselected radio button.

Regular Bar Code: The printed code used for recognition by a bar code scanner (reader). Traditional one dimensional bar codes use the bar's width to encode just a product or account number.

UPC-A Bar Code: (Universal Product Code) The standard bar code printed on retail merchandise. The UPC is read by passing the bar code over a scanner.

Input or Modify the Bar Codes

Configure bar codes for your wash packages and options. The codes will be added to the receipts produced by the thermal printer. The maximum length of a bar code is fifteen characters.



The screenshot shows a rectangular panel with a text input field. Above the input field is the text: "If you assign bar codes for your wash packages and options, the codes will be added to the receipts produced by the thermal printer. The maximum length of a bar code is fifteen characters." Below the input field is the label "Deluxe Wash:" followed by the input field.

Input or Modify the UPC Codes

Configure UPC codes for your wash packages and options. The codes will be added to the receipts produced by the thermal printer. The Manufacturer Identification Number must be a six digit number and the Item Number must be a five digit number. The Check Digit will be generated automatically.

If you assign UPC codes for your wash packages and options, the codes will be added to the receipts produced by the thermal printer. The Manufacturer Identification Number must be a six digit number and the Item Number must be a five digit number. The Check Digit will be generated automatically.

	Manufacturer Identification Number	Item Number	Check Digit
Wash 1:	<input type="text"/>	<input type="text"/>	
Wash 2:	<input type="text"/>	<input type="text"/>	
Wash 3:	<input type="text"/>	<input type="text"/>	
Wash 4:	<input type="text"/>	<input type="text"/>	
Free Wash:	<input type="text"/>	<input type="text"/>	
Rewash:	<input type="text"/>	<input type="text"/>	

Setup the Interface to a Bar Code Reader

The r-TC can be configured to send bar code data via the serial port to a cash register. In this way, the r-TC simulates a bar code reader. If this feature is enabled, the same bar code information that would be printed on a receipt will be sent electronically to a cash register. Similarly to a receipt, the information is sent when a user presses the print button on the PBS 4000.

General

Enable: Time between messages: ms

Baud Rate: Com Port:

Prefix and Postfix

Input as Hexadecimal:

Prefix:

Postfix:

Enable: To activate this feature check the 'Enable' check box.

Time Between Messages: Multiple bar codes might be sent for the same vehicle (if options are selected for example). To set the amount of time between messages sent to the cash register, set a time in the 'Time between messages' edit box.

Baud Rate: The baud rate must be set to the value expected by the cash register.


Com Port: It is possible to use either of the two com ports on back of the Touch Screen computer. You must select the same comport as the physical connection that you choose.

Prefix/Postfix: A prefix and postfix can be added to each bar code message that is sent to the cash register. If a regular string is required, then make sure the 'Input as hexadecimal' check box is not checked. If any non-ascii characters are required, then the 'Input as hexadecimal' check box should be checked and the string should be entered as a hexadecimal value (do not enter the leading '0x').

Note: This feature is designed to communicate over an RS-232 port. If the touch screen computer that you have purchased is an Advantech TPC-650 or TPC-1250 then both ports (COM1 and COM2) are RS-232 ports. If you have purchased the Advantech TPC-651 or TPC-1251, then COM1 is an RS-232 port but COM2 is adjustable and can be set to be RS-232, RS-422, or RS-485.

Financial

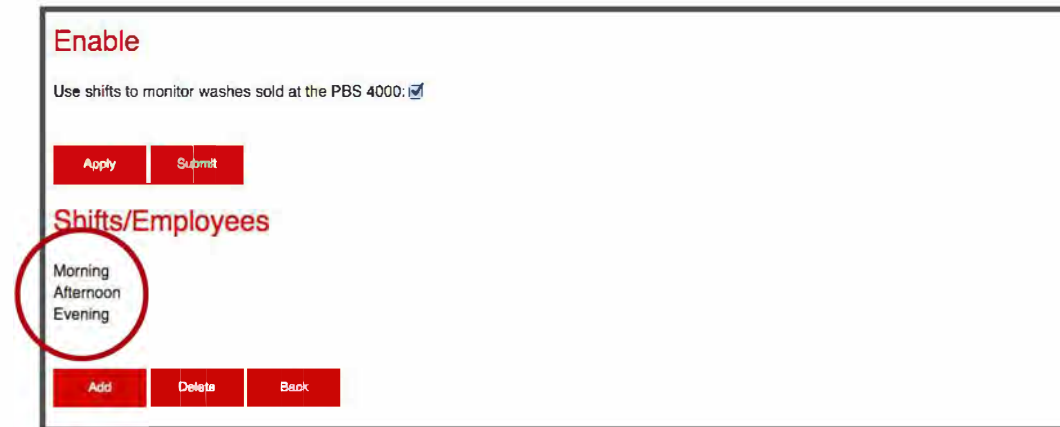
The financial web pages are used to setup shifts and monitor the sales of your car wash, vending machines and pre-paid customers. As well, the taxes applied to your wash packages can be set or changed.



A screenshot of a web application menu. The menu is titled "Setup" in red. Below it, there are several options: "Shifts", "Tax Rates", "Spy", "Wash Counters", "Shift Report History", "Daily/Period Reports", "Hourly Statistics", "Pre-paid Customers", and "General Settings". The "Pre-paid Customers" option is highlighted in red.

Set Up Shifts

The First control on the 'Set Up Shifts' page is a check box that determines if shifts are enabled on the r-TC. If this box is checked then the employee must log into a shift before wash packages can be activated from the PBS 4000. Also, any washes sold during the employee's shift will be counted and reported on the employees shift report.



A screenshot of the "Set Up Shifts" page. The page has a title "Enable" in red. Below the title, there is a checkbox labeled "Use shifts to monitor washes sold at the PBS 4000:" which is checked. Below the checkbox, there are two red buttons: "Apply" and "Submit". Below these buttons, there is a section titled "Shifts/Employees" in red. Under this section, there is a list of shift names: "Morning", "Afternoon", and "Evening". The "Morning" option is circled in red. Below the list, there are three red buttons: "Add", "Delete", and "Back".

To add a new shift click on **'Add'**. Enter the shift or employee name then click on the **'Submit'** button



A screenshot of the "Add a New Shift/Employees" page. The page has a title "Add a New Shift/Employees" in red. Below the title, there is a text input field labeled "Employee/Shift Name:". Below the input field, there are two red buttons: "Submit" and "Back".

In order to delete a shift, you must first select the **'Financial'** link on the main header. Once you have the **'Set Up Shifts'** page open, you must select **'Delete'** at the bottom of the screen.

A list of the **'Shifts'** will appear, with a red **'X'** next to each. You can click on the red **'X'** to delete the shift.

Tax Rates

Clicking on the **'Tax Rates'** button will take you to the screen shown below: You can enter the names and specify the rates of the taxes applicable in your region. You may also compound the taxes by checking off **'Second tax compounds the first tax'**.

Compound Taxes: After the first tax is applied, the second tax is added to the sub-total of the price + the first tax.

Example: In Quebec, two sales taxes are applicable: GST and PST. The PST is applicable on the sub-total of the price + GST, as follows: $4.50 + 6\% \text{ (GST)} = 4.77 + 7.5\% \text{ (PST)} = 5.13$

Once all taxes are named and completed, you may click **'Apply'** or **'Submit'** or to save the tax information.

First Tax

Name: Rate: %

Second Tax

Name: Rate: %

Compound

Second tax compounds the first tax:

Apply **Submit** **Back**

Shift Report History

The **Shift Report History** page shows all the shifts of the previous two weeks. To see the shifts report of a specific shift, click on the shift.

From: Sep 21 2004 - 16:32:00 To: Sep 21 2004 - 16:32:00 Morning
From: Mar 28 2007 - 11:11:00 To: Mar 28 2007 - 11:11:00 Afternoon
From: Mar 28 2007 - 11:10:00 To: Mar 28 2007 - 11:10:00 Morning
From: Mar 20 2007 - 11:29:00 To: Mar 20 2007 - 11:29:00 Morning
From: Mar 20 2007 - 11:29:00 To: Mar 20 2007 - 11:29:00 Morning
From: Mar 20 2007 - 11:26:00 To: Mar 20 2007 - 11:26:00 Morning
From: Mar 20 2007 - 11:26:00 To: Mar 20 2007 - 11:26:00 Morning
From: Mar 20 2007 - 11:26:00 To: Mar 20 2007 - 11:26:00 Morning
From: Mar 20 2007 - 11:09:00 To: Mar 20 2007 - 11:09:00 Morning
From: Mar 20 2007 - 11:08:00 To: Mar 20 2007 - 11:08:00 Afternoon
From: Mar 20 2007 - 11:08:00 To: Mar 20 2007 - 11:08:00 Morning
From: Mar 20 2007 - 11:08:00 To: Mar 20 2007 - 11:08:00 Morning
From: Mar 19 2007 - 12:33:00 To: Mar 19 2007 - 12:33:00 Morning
From: Mar 08 2007 - 15:22:00 To: Mar 08 2007 - 15:28:00 No Shift Active

Shift / Employee Report

My Car Wash
5212 Harwood
hudson
Quebec
450 458 8826

Shift Report
Morning

Report Sequence Number: 2
From: Apr 20 2009 - 08:05:00
To: Apr 20 2009 - 12:17:00

COUNTERS

Wash Package	%	Cars
Basic	54.8	17
Extra	12.9	4
Supreme	16.1	5
Package 23	0.0	0

Option	%	Cars
Extra wax	3.2	1
RainX	12.9	4

Zero Cost Option	%	Cars
Covered Pickup	6.5	2

Coupon	%	Cars
Dollar off	9.7	3
Two dollars off	3.2	1

Free Wash	%	Cars
Rewash	0.0	0
Employee Wash	3.2	1

Pre-paid Wash Package	%	Cars
Basic	0.0	0
Extra	9.7	3
Supreme	6.5	2
Package 23	0.0	0
Default	0.0	0

Pre-paid Option	%	Cars
Extra wax	0.0	0
RainX	6.5	2

Total cars : 31

SALES

Wash Package	Amount
Basic	102.00 \$
Extra	32.00 \$
Supreme	50.00 \$
Package 23	0.00 \$
Default	0.00 \$

Option	Amount
Extra wax	1.50 \$
RainX	8.00 \$

Coupons	Amount
Dollar off	3.00 \$
Two dollars off	2.00 \$

Free Wash	Amount
Rewash	0.00 \$
Employee Wash	6.00 \$

Total package sales : 184.00 \$
Total options sales : 9.50 \$
Total coupons redeemed : 5.00 \$
Total value of free washes : 6.00 \$
Total sales before taxes : 182.50 \$

Fed : 9.13 \$
Prov : 13.42 \$

Total sales : 205.05 \$

Total package sales / car : 6.13 \$
Total options sales / car : 0.31 \$
Total coupons redeemed / car : 0.16 \$
Total sales / car : 6.83 \$

Date : Apr-21-2009
Time : 10:31

Daily Period Reports

This web page allows you to monitor the financial performance of your car wash. You can view the past performance of your wash on any given day or you can select a range of dates and get a summary for that period.

Today
Yesterday

So far this week
Last week

So far this month
Last month

Daily Reports

Pick a date

Period Reports

From

To

Date Picker

<< October 2008 >>

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	
today		close				

At the top of the page quick links are displayed for the daily reports of the current and previous days, current and previous week, and current and previous month. Simply click on the link and the financial report for that day or period will be displayed.

Daily Reports

COUNTERS		
Wash Package	%	Cars
Basic	76.0	79
Extra	10.6	11
Supreme	8.7	9
Package 23	0.0	0
Option		
Option	%	Cars
Extra wax	1.9	2
RainX	4.8	5
Zero Cost Option		
Option	%	Cars
Covered Pickup	1.9	2
Coupon		
Coupon	%	Cars
Dollar off	3.8	4
Two dollars off	1.9	2
Free Wash		
Free Wash	%	Cars
Rewash	1.0	1
Employee Wash	1.0	1
Pre-paid Wash Package		
Pre-paid Wash Package	%	Cars
Basic	0.0	0
Extra	2.9	3
Supreme	1.9	2
Package 23	0.0	0
Default	0.0	0
Pre-paid Option		
Pre-paid Option	%	Cars
Extra wax	0.0	0
RainX	1.9	2
		Total cars : 104
SALES		
Wash Package	Amount	
Basic	474.00 \$	
Extra	88.00 \$	
Supreme	90.00 \$	
Package 23	0.00 \$	
Default	0.00 \$	

Option	Amount
Extra wax	3.00 \$
RainX	10.00 \$
Coupons	
Coupons	Amount
Dollar off	4.00 \$
Two dollars off	4.00 \$
Free Wash	
Free Wash	Amount
Rewash	6.00 \$
Employee Wash	6.00 \$
Total package sales : 652.00 \$	
Total options sales : 13.00 \$	
Total coupons redeemed : 8.00 \$	
Total value of free washes : 12.00 \$	
Total sales before taxes : 645.00 \$	
Fed : 32.26 \$	
Prov : 47.37 \$	
Total sales : 724.63 \$	
Total package sales / car : 6.39 \$	
Total options sales / car : 0.12 \$	
Total coupons redeemed / car : 0.07 \$	
Total sales / car : 7.10 \$	
PREPAID SALES	
Total sales before taxes : 120.00 \$	
Fed : 6.00 \$	
Prov : 8.82 \$	
Total sales : 134.82 \$	
First car wash of the day : 08:05	
Last car wash of the day : 19:54	
Date : May-14-2009	
Time : 07:12	

The r-TC stores financial data for up to two years. Use the date picker (**see previous page**) to select the desired date then click on the **'Submit'** button.

Period Reports

COUNTERS				
Wash Package	%	Cars		
Basic	76.0	79		
Extra	10.6	11		
Supreme	8.7	9		
Package 23	0.0	0		
Option	%	Cars		
Extra wax	1.9	2		
RainX	4.8	5		
Zero Cost Option	%	Cars		
Covered Pickup	1.9	2		
Coupon	%	Cars		
Dollar off	3.8	4		
Two dollars off	1.9	2		
Free Wash	%	Cars		
Rewash	1.0	1		
Employee Wash	1.0	1		
Pre-paid Wash Package	%	Cars		
Basic	0.0	0		
Extra	2.9	3		
Supreme	1.9	2		
Package 23	0.0	0		
Default	0.0	0		
Pre-paid Option	%	Cars		
Extra wax	0.0	0		
RainX	1.9	2		
Total cars : 104				
SALES				
Wash Package		Amount		
Basic		474.00 \$		
Extra		88.00 \$		
Supreme		90.00 \$		
Package 23		0.00 \$		
Default		0.00 \$		
Option				
Extra wax		Amount		
RainX		3.00 \$		
		10.00 \$		
Coupons				
Dollar off		Amount		
Two dollars off		4.00 \$		
		4.00 \$		
Free Wash				
Rewash		Amount		
Employee Wash		6.00 \$		
		6.00 \$		
Total package sales :			652.00 \$	
Total options sales :			13.00 \$	
Total coupons redeemed :			8.00 \$	
Total value of free washes :			12.00 \$	
Total sales before taxes :			645.00 \$	
			Fed :	32.26 \$
			Prov :	47.37 \$
Total sales :			724.63 \$	
Total package sales / car :			6.39 \$	
Total options sales / car :			0.12 \$	
Total coupons redeemed / car :			0.07 \$	
Total sales / car :			7.10 \$	
PREPAID SALES				
Total sales before taxes :			120.00 \$	
			Fed :	6.00 \$
			Prov :	8.82 \$
Total sales :			134.82 \$	
Date : May-15-2009				
Time : 00:24				

The r-TC stores financial data for up to two years. To view a period report for any range of dates use the date pickers to select the desired dates then click on the submit button. Both end dates are included in the period report totals.

Period Reports

From

To

Date Picker

Hourly Statistics by Day

Quick links are displayed for the hourly statistics for the current and previous days, current and previous week, and current and previous month. Simply click on the link and the charts for that period will be displayed.

[Today](#)
[Yesterday](#)

[So far this week](#)
[Last week](#)

[So far this month](#)
[Last month](#)

Date Picker

Daily Reports

Pick a date

Period Reports

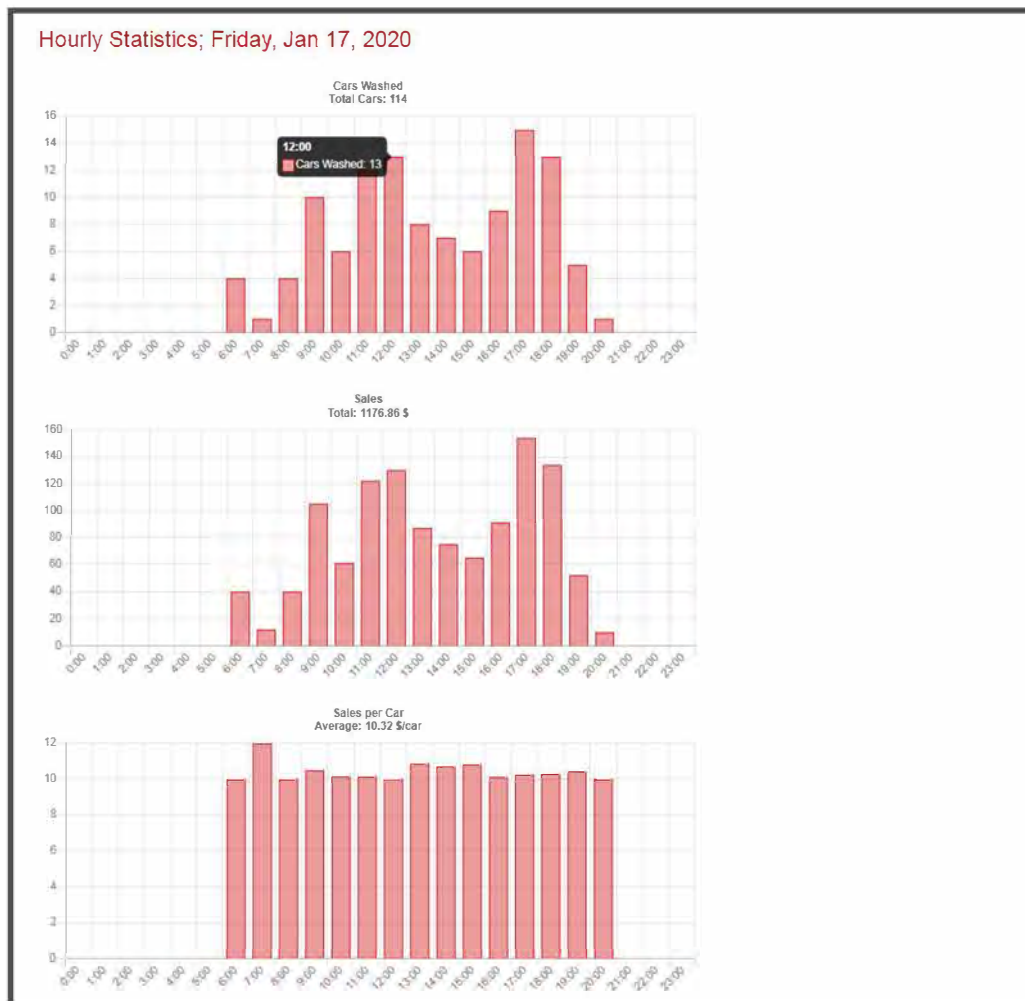
From

To

October 2008

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

The r-TC stores financial data for up to two years. To view hourly statistics for any range of dates that are less than a year old, use the date pickers to select the desired dates then click on the submit button. Both end dates are included in the chart's totals.



Vending Machine Daily/Period Reports

This web page allows you to monitor the financial performance of your vending machine equipment. You can view the past performance of your equipment on any given day or you can select a range of dates and get a summary for that period.

Vending Machine Hourly Statistics by Day

Quick links are displayed for the hourly statistics for the current and previous days, current and previous week, and current and previous month. Simply click on the link and the charts for that period will be displayed.

Pre-Paid Customer

The Pre-paid Customers feature of the r-TC allows an owner to sell bundles of car washes to customers. Each customer is issued an RFID tag that must be mounted on the windshield of their vehicle. As the customer approaches the entrance of the car wash, the r-TC will detect the customer and assign the wash package that was previously purchased. The r-TC will monitor the washes redeemed by each customer and will stop issuing washes when the customer has used up all his pre-paid washes. The RFID tags can also be read using the r-TC 's handheld greeter stations.



RFID WINDSHIELD TAG

General Settings

Enable:

Carwash ID Number:

Email customers a statement after each wash:

Email customers a statement at the end of the month:

Sample of a Pre-paid RFID tag:

A sample of a pre-paid RFID tag, identical to the one shown above. It features a barcode and the number '50000000001'. Below the number, a bracket spans the width of the tag, with two lines extending downwards to point to the labels 'Carwash ID' and 'Customer ID'.

Enable: If this check box is selected then the Pre-paid Customers feature is enabled on the r-TC.

Car Wash ID Number: This is a unique number associated with your car wash. The number is the first 6 digits of the number printed on each RFID tag.

Email Customers: It is possible to configure the r-TC to email statements to pre-paid customers, but first email must be enabled and set up (see the **'Spy'** web page, **page 99**).

Customers

This web page is used to view the pre-paid customers, add new customers, delete customers, and to add the washes that customers have purchased. This web page is only available if the **Enabled** check box is selected on the **General Setting** web page. To add a new customer click on the **Add** button at the bottom of the page.

There are currently no pre-paid customers. Click on the Add button to create some.

Add

Back

*ID Number:

Address:

*First Name:

City:

*Last Name:

State:

*Phone Number:

Zip Code:

eMail:

Do not email statements to this customer:

Contract Information

Use Expiration Date Only:

Use Number of Washes Only:

Whichever Expires First:

*Wash Package:

Option 1:

Option 2:

Option 3:

Exempt from any locked out hours:

ID Number: The customer ID number is the last 6 digits of the number printed on each RFID Tag. This is a required field (cannot be left blank).

First Name: The first name of the customer. This is a required field.

Last Name: The last name of the customer. This is a required field.

Phone Number: The telephone number of the customer. The phone number can be entered with or without hyphens, brackets, etc. This is a required field.

eMail: The email address of the customer.

Do not eMail statements to this customer: This check box will be visible if the “**Email customers a statement...**” check boxes are selected in the General Settings page (**See page 86**). Select this check box if your customer does not want to receive an email statement.

Address: The street name and number of the customer’s home address.

City: The city name of the customer’s home address.

State: The state name of the customer’s home address.

Zip Code: The zip code of the customer’s home address.

Contract Information

This section defines the type of contract the customer is purchasing. The actual number of washes purchased (or expiration date) will be set up on a different web page.

Use Expiration Only: Select this radio button if the customer has bought a package where he can wash his car as often as he wishes up until a fixed expiration date.

Use Number of Washes Only: Select this radio button if the customer has bought a package of a fixed number of car washes with no expiration date.

Whichever Expires First: Select this radio button if the customer has bought a package that combines an expiration date and a fixed number of washes. For example, the customer may be able to wash his car for a month as often as he wishes, as long as he does not exceed 30 washes total for that month.

Wash Package: The wash package that the customer will receive each time he washes his car. This is a required field.


Option 1, 2, 3 : The options (if any) that the customer will receive each time he washes his car.

Exempt from any locked out hours : Please select the check box if you wish this customer to be exempt from any locked out hours.

Pre-Paid Customers

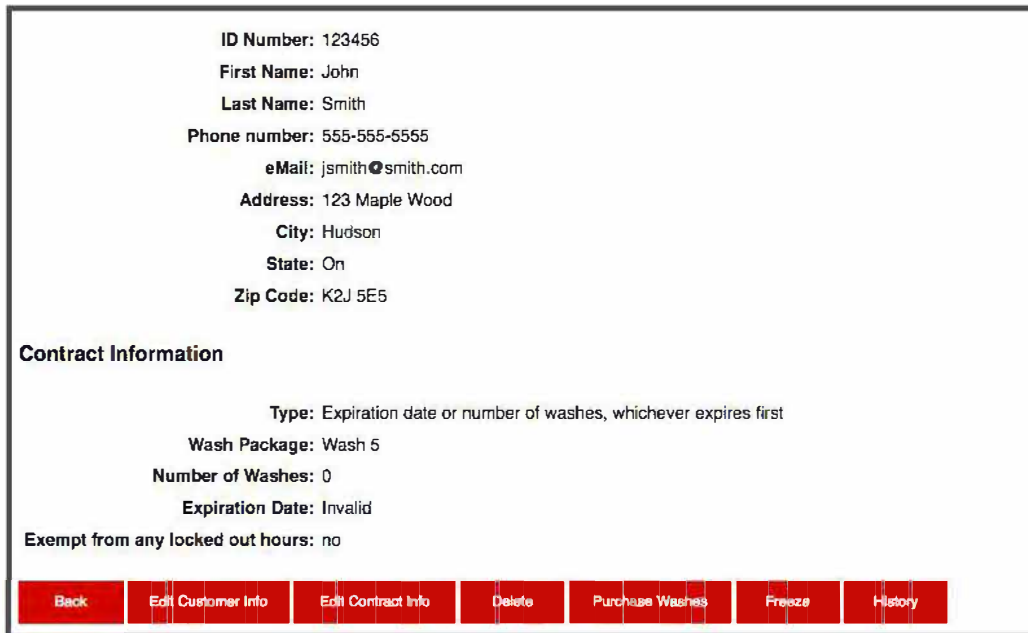
After you click on the submit button on the **Add a new Pre-Paid Customer** web page you will be taken to the **Pre-Paid Customer** web page. This page is used to view all the details of this particular customer and also has links to modify or update the customer's personal information or pre-paid package.

Please note that you can also access this web page by first going to the **Pre-Paid Customer** web page then clicking on the Last Name of the desired customer.



Last Name	First Name	Phone Number	ID Number	Remaining Washes	Expiration Date
Jones	Frank	123-456-7892	000002	0	Invalid
Smith	John	123-456-7891	000001	0	Invalid

The customer's personal information is displayed as well as the details of the contract that the customer has purchased.



ID Number: 123456
First Name: John
Last Name: Smith
Phone number: 555-555-5555
eMail: jsmith@smith.com
Address: 123 Maple Wood
City: Hudson
State: On
Zip Code: K2J 5E5

Contract Information

Type: Expiration date or number of washes, whichever expires first
Wash Package: Wash 5
Number of Washes: 0
Expiration Date: Invalid
Exempt from any locked out hours: no

[Back](#) [Edit Customer Info](#) [Edit Contract Info](#) [Delete](#) [Purchase Washes](#) [Freeze](#) [History](#)

Edit Customer Info: Click on this link to modify any of the details of the customer's personal information.

Delete: Click on this link to delete the customer completely.

Edit Contract Info: Click on this link to modify any of the details of the customer's contract (for example to add an option or change the wash package). If the customer is paying for the change enter the amount of money collected, otherwise leave the **'Price'** field blank.



Use Expiration Date Only:
Use Number of Washes Only:
Whichever Expires First:
*Wash Package: Wash 1
Option 1: none
Option 2: none
Option 3: none
Price: dollars

Purchase Washes: Click on this link to add washes to an existing contract. One of the three screens shown below will appear depending on the type of customer contract.

USE NUMBER OF WASHES ONLY

Number of Washes to Add:
 Price: dollars

USE EXPIRATION DATE ONLY

New Expiration Date:
 Price: dollars

WHICHEVER EXPIRES FIRST

New Total Number of Washes:
 New Expiration Date:
 Price: dollars

Note: In this type of contract, the value entered in the **'New Total Number of Washes'** field will not be added to whatever the customer has remaining in his account but will become the new total no matter how many washes customer has remaining.

Example: If the customer has **6** remaining washes and you enter **10** washes, only 4 washes will be added.

Customers

Freeze: Click on this link to freeze a customer's account. While the account is frozen the r-TC will not allow the customer to redeem any of his pre-paid car washes.

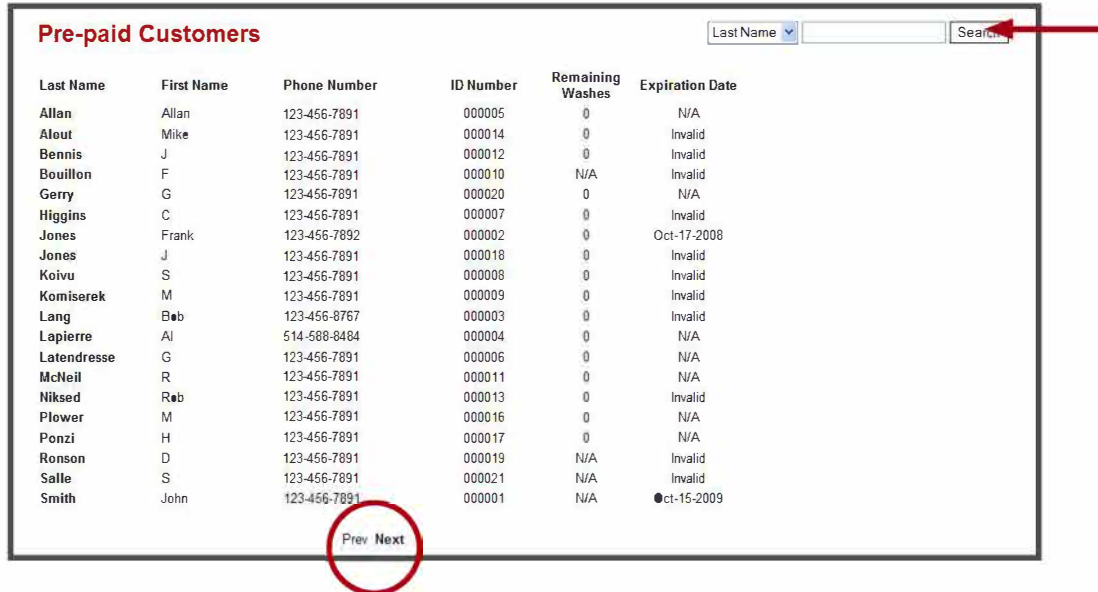
Un-Freeze: Click on this link to un-freeze a customer's account that was previously frozen. This link will only be available if the customer's account is currently frozen.

History: Click on this link to view a complete history of this customer's activity including washes purchased and redeemed.

Date	Transaction Type	Price	Details
Aug-28-2010	Wash Redeemed	N/A	Wash Package: Wash 1
Aug-16-2010	Wash Redeemed	N/A	Wash Package: Wash 4
Aug-16-2010	Purchase	100.00 \$	Washes bought: 10
Aug-16-2010	Account Created	N/A	Wash Package: Wash 4, Option: Option 1, Option: Option 2, Type: Number of washes only

Pre-Paid Customers

The r-TC will display a maximum of 20 customers on one page. Use the navigation links at the bottom of the screen to move from page to page.



Last Name	First Name	Phone Number	ID Number	Remaining Washes	Expiration Date
Allan	Allan	123-456-7891	000005	0	N/A
Alout	Mike	123-456-7891	000014	0	Invalid
Bennis	J	123-456-7891	000012	0	Invalid
Bouillon	F	123-456-7891	000010	N/A	Invalid
Gerry	G	123-456-7891	000020	0	N/A
Higgins	C	123-456-7891	000007	0	Invalid
Jones	Frank	123-456-7892	000002	0	Oct-17-2008
Jones	J	123-456-7891	000018	0	Invalid
Koivu	S	123-456-7891	000009	0	Invalid
Komiserek	M	123-456-7891	000009	0	Invalid
Lang	Bob	123-456-8767	000003	0	Invalid
Lapierre	Al	514-588-8484	000004	0	N/A
Latendresse	G	123-456-7891	000006	0	N/A
McNeil	R	123-456-7891	000011	0	N/A
Niksed	Rob	123-456-7891	000013	0	Invalid
Plower	M	123-456-7891	000016	0	N/A
Ponzi	H	123-456-7891	000017	0	N/A
Ronson	D	123-456-7891	000019	N/A	Invalid
Salle	S	123-456-7891	000021	N/A	Invalid
Smith	John	123-456-7891	000001	N/A	Oct-15-2009

To view or edit the details of a particular customer click on his last name.

To find a particular customer use the **Search** button found at the top right hand corner of the screen (please note that if there are less than one page of customers the search feature is not available). First select which category to search (**Last Name, Phone Number or ID Number**). Enter a string to search for within the selected category, then click the **Search** button.

For last names and phone numbers the r-TC will search for any customer that matches the string. The entire string need not be entered. For example if the customer's last name is "Smith", the r-TC will find this customer if you searched for "smi" or even "mit".

For ID numbers enter either the entire ID number printed on the customers RFID tag, or just the customer portion of the ID (the last six digits).

Tools

This web page gives you access to powerful tools for maintaining your car wash.

Simulators

The r-TC provides two simulators that mimic the functionality of the Gate and the Pulse inputs. The Gate simulator is used to keep the wash running if the real gate sensor were to fail for whatever reason. The gate simulator is intended to be used temporarily until the real gate input is fixed. The pulse simulator is also intended to be used temporarily when the pulse fails but can also be set to be permanently on for car washes that do not have a pulse input. The simulators will not be as accurate as the real sensors, but they will allow the car wash to continue to wash cars until the inputs can be repaired.

The screenshot shows a web interface for simulators. It is divided into two main sections: 'Gate Simulator' and 'Pulse Simulator'.
Gate Simulator: Includes input fields for 'Delay On' and 'Time On', both labeled 'pulses'. Below these are two radio buttons: 'Use Pulses' (which is selected) and 'Use Seconds'.
Pulse Simulator: Includes an input field for 'Pulses per hour' labeled 'pulses' and a checkbox for 'Permanently On'.
A note below the Pulse Simulator section states: 'Please note that if the pulse simulator is Permanently On then you will not be able to turn the simulator on or off using the touchscreen. This mode is intended for car washes that do not have a pulse at all and is not intended for a car wash with a temporarily broken pulse.'
At the bottom of the form are two red buttons: 'Apply' and 'Submit'.
Below the form is a section titled 'Simulator Activation'. It has a sub-header 'Simulator Status' and two rows. The first row is for 'Gate' and the second for 'Pulse'. Each row has a grey circle on the left and a red button labeled 'Turn On' on the right.

Delay On: The gate simulator will turn on after a delay from the time the first roller is called up. This delay can be entered in either seconds or pulses.

Time On: The Gate simulator will stay on for this length of time, measured in either pulses or seconds. When the gate simulator is being used every car will be considered to be the same length.

Use Seconds/Use Pulses: Use this control to determine the units for the Delay On and the Time On.

Pulses Per Hour: Use this field to set the speed at which you want the pulse simulator to run. If your conveyor has been previously running then the r-TC will suggest a conveyor speed based on your conveyor's own speed.

Suggested pulses per hour: The r-TC will measure the conveyor speed while it is running normally. The value posted here is the last valid conveyor speed measured by the r-TC. It is suggested that this value be used for the pulse simulator in order to simulate the conveyor as closely as possible. If the conveyor has not run normally then this value will not appear.

Permanently On: This mode is intended for car washes that do not have a pulse at all and is not intended for a car wash with a temporarily broken pulse. If the pulse simulator is Permanently On then you will not be able to turn the simulator on or off using the touch screen.

Simulator Activation: These controls are used to turn the simulators on or off remotely. These controls mimic the controls on the 'Tools' tab of the touch screen.

Equipment Overrides

The Overrides page is used to test all the equipment by forcing them on. The Overrides page can also be used to temporarily disable a piece of equipment, in this case the equipment would be forced off even it a car is being washed and the service would normally turn on.

For safety reasons, the ability to force on a piece of equipment is by default not available from the web interface. To enable this feature, go to the '**Overrides**' tab on the r-TC touch screen and check off the '**Allow Web**' check box, **see page 120**.



For safety reasons, this utility should not be used when the car wash is open and anyone working in the car wash should be made aware that you are starting pieces of equipment. It could be hazardous to a vehicle or a person to have a piece of equipment turn on unexpectedly. With this in mind, the overrides on the web page will not be available unless access to the overrides has been enabled through the r-TC touch screen (see the touch screen section of this manual). This was done to ensure that someone at the car wash is aware that the equipment may be overridden and proper safety measures can be taken (for example, closing the car wash and making sure the car wash bay is empty and that no one is currently working on the equipment).

All Auto			
Rinse Arch Wash Service			
Force Off	Force On	Force On with Conveyor	Auto
Soap Arch Wash Service			
Force Off	Force On	Force On with Conveyor	Auto
Triple Foam Wash Service			
Force Off	Force On	Force On with Conveyor	Auto
Side Brush Wash Service			
Force Off	Force On	Force On with Conveyor	Auto
Dryers Wash Service			
Force Off	Force On	Force On with Conveyor	Auto

By default, all the equipment is in the 'Auto' mode. In this mode the pieces of equipment will turn on automatically as a car is washed.

To force a piece of equipment on, click on the 'Force On' button next to the piece of equipment. The 'Force On' button will only be visible if the 'Allow Web' check box on the 'Overrides' tab on the r-TC touch screen is checked. When 'Force On with Conveyor' is selected the piece of equipment will only come on when the conveyor is running and will remain on until the conveyor stops.

Once your test is complete, and you no longer wish to force on the piece of equipment, click on the 'Auto' button. This will place the piece of equipment back in automatic mode where it will turn on/off automatically as cars are washed.

The 'Off' button is used to force off a piece of equipment. This is typically done when a piece of equipment is not functioning properly and needs to be disabled. Cars can still be washed while the equipment is forced off, but the pieces of equipment will never be activated.

Once the equipment is functioning properly, and you no longer wish to force off the pieces of equipment, click on the 'Auto' button. To quickly return all equipment to the default automatic mode, click on the 'All Auto' button.

Please note that if the r-TC software is stopped, or the power is reset on the r-TC system, once the r-TC software restarts all equipment will be reset to the 'Auto' mode.

Door Overrides

Typically a door would be overridden to be permanently open when the door is malfunctioning. First open the door and somehow physically lock the door open. Use this web page to override the door in question. The r-TC will still respect the upper limit switch of the door and will not allow the conveyor to run if there is a risk of a car being pushed into a door.

Permanently Open Door

Entrance Door

Exit Door

Output Overrides

The Output Overrides web page is used to force on individual outputs. In order for overrides to be available to this web page they must be enabled from the PBS 4000 or from an input (look for "Enable Web Overrides"). If you are using an input then the input must be held on for at least 2 full seconds and for no more than 5 seconds. This is a safety feature to ensure that overrides are only available once they have been enabled by a person at the car wash site. Output Overrides will automatically be disabled after 5 minutes.



Force On: Click on this button to turn on the output.

Automatic: Click on this button to return the output to automatic mode, in automatic mode the output turns on or off based on the normal running of the car wash.

All Automatic: Click on this button to return ALL out the outputs to automatic mode.

Close Carwash Override

Typically the carwash would be set to Closed by a Schedule or through the Touchscreen. Use this web page to remotely force the carwash Closed.

Please note that if you force the car wash closed it will remain closed even after a reboot of the r-TC.



DMX Lights Overrides

This web page is used to override the control of a DMX Light. Typically a DMX light can display a range of colors and intensities. Each manufacturer sets up their lights differently so you will need to know some information about the light you are trying to control.

Firstly you will need to know the “Start Address” of the individual light, this is a value from 1 to 512.


Each aspect that is controllable in the light has a channel. For example Channel 1 could be for the intensity of Red. Each channel is a value from 0 to 255. You will need to know how many channels are controllable for your light and what each channel represents.

Once you have this information, set the Start Address in the web page, the number of channels, then use the sliders to adjust the values of each channel from 0 to 255. In “Override” mode your changes will be seen immediately in the light as you adjust the sliders. In “Auto” mode the light will ignore the values set on this page and instead follow its automatic behavior.


Start Address: 1 ▾
Number of Channels: 4 ▾

Override Auto

Ch 1: 113


Ch 2: 0


Ch 3: 132


Ch 4: 0


Downloads

The downloads page is used to provide remote access to some important files on the r-TC. To download a file simply click on the link. The following file types are available for download;

Download Configuration File	
Download History File	
Download Black Box Viewer Tool	
Black Box Files	
CurrentHour.bb	182 B
Jun 13 2013 2100.bbcp	61 B

Configuration File

The configuration file stores all of the information that has been set up through the r-TC's web interface. A technician might download this file to install it on another identical car wash, to backup the configuration for safety, or to analyze the car wash setup remotely.

History File

The History file contains a log of any important event that happened on the r-TC. This includes any alerts or warnings generated by the r-TC. As well, any time the car wash configuration is modified, a note of the change is made in the History. All entries in the History are time stamped and color coded.

Pre-Paid Customer Database

If you are using the r-TC to sell pre-paid washes all of your customer information is contained within this file. We suggest you download and back up this file occasionally to protect the data

Black Box Files

The r-TC Black Box Recorder works similarly to the flight recorder on an airplane. Important data is recorded continuously concerning the state of the r-TC (inputs detected, outputs set, etc.). If a problem occurs, a technician can download the appropriate black box files and analyze the event. Obviously, there are memory limits to any system and the black box files will eventually be erased if not downloaded. If a problem occurs it is important to download the Black Box Files from the time of the problem, before they are eventually erased.

Black Box Viewer Tool

The r-TC Black Box Viewer is used to analyze the data contained within the black box files. **(See Appendix F, page 140 for instructions on how to use the Black Box Viewer Tool.)**

Custom Equipment Files: Custom equipment files are used to define the properties of a piece of equipment that is specific to a manufacturer. A technician or advanced user might download this type of file to modify a specific piece of equipment or to add new equipment definitions.

Please see an example of an XML file on the next page.

Example of an XML file

```
<?xml version="1.0" ?>
- <tc>
  <version>1.0</version>
  - <manufacturer>
    <title>My Car Wash Equipment Company</title>
  </manufacturer>
  - <equipmentDefinition>
    <title>Generic Car</title>
    <type>GENERIC_CAR</type>
  - <maintenance>
    - <event>
      <doc>Event1.pdf</doc>
      <desc>Test 2</desc>
      <daysDue>4</daysDue>
      <daysOverdue>6</daysOverdue>
      <cyclesDue>5</cyclesDue>
      <cyclesOverdue>10</cyclesOverdue>
      <runHoursDue>1</runHoursDue>
      <runHoursOverdue>2</runHoursOverdue>
    </event>
    - <event>
      <doc>Event2.pdf</doc>
      <desc>Test Service 2</desc>
      <daysDue>8</daysDue>
      <daysOverdue>12</daysOverdue>
      <cyclesDue>15</cyclesDue>
      <cyclesOverdue>20</cyclesOverdue>
      <runHoursDue>8</runHoursDue>
      <runHoursOverdue>20</runHoursOverdue>
    </event>
    - <event>
      <doc>Event3.pdf</doc>
      <desc>Test Service 3</desc>
      <daysDue>16</daysDue>
      <daysOverdue>20</daysOverdue>
      <cyclesDue>15</cyclesDue>
      <cyclesOverdue>20</cyclesOverdue>
      <runHoursDue>20</runHoursDue>
      <runHoursOverdue>24</runHoursOverdue>
    </event>
  </maintenance>
</equipmentDefinition>
</tc>
```

Uploads

The Uploads web page is used to upload a file from your computer to the r-TC.



Configuration File (TCCConfig.dat)	<input type="button" value="Choose File"/>	No file chosen	<input type="button" value="Upload File"/>
Custom Equipment File (*.xml)	<input type="button" value="Choose File"/>	No file chosen	<input type="button" value="Upload File"/>
Modbus Devices File(*.xml)	<input type="button" value="Choose File"/>	No file chosen	<input type="button" value="Upload File"/>
Document	<input type="button" value="Choose File"/>	No file chosen	<input type="button" value="Upload File"/>
Any File	<input type="button" value="Choose File"/>	No file chosen	<input type="button" value="Upload File"/>

Configuration File: The configuration file contains a copy of everything that is set up through the r-TC's web interface. Click on the 'Browse' button and find the file on your local computer. Click on the 'Upload File' button to start the upload process. The entire process may take a few moments, do not click on any other buttons during this time or else the process will be interrupted.

If the upload completed successfully you will be brought to the following web page.



The configuration file was uploaded successfully. If you would you like to replace the existing configuration file with this new file then click on the "Replace Current Configuration" button below. please note that the current configuration will be automatically backed up and any previous backup will be lost.

WARNING: If you continue the r-TC Tunnel Controller will be automatically rebooted. This should NOT be done while the car wash is in use.

At this point the new configuration has been uploaded to the r-TC and stored in a temporary folder. If you want to replace the current configuration with the newly updated configuration, click on the **Replace Current Configuration** button. As is mentioned on the web page, the r-TC will reboot automatically after the configuration is replaced. It may take a few minutes for the reboot to complete before you are able to access any web pages. Obviously, if there are any cars being washed at this time they will be lost by the r-TC. Do not replace the current configuration unless you are sure the car wash is not being used.

Custom Equipment File: A custom equipment file is in the **XML** format and must have the **.XML** extension. Click on the '**Browse**' button and find the file on your local computer. Click on the '**Upload File**' button to start the upload process. The entire process may take a few moments, do not click on any other buttons during this time or else the process will be interrupted.

If the upload completed successfully you will be brought to the following web page.

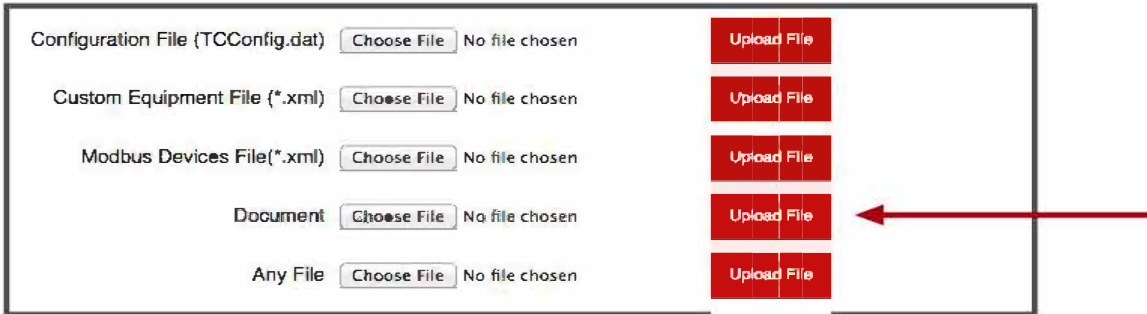


The custom equipment file was uploaded successfully.

The file was automatically moved to the proper folder and your new custom equipment will be available immediately.


Document: Use this control to upload a file such as a **PDF or JPEG** to the r-TC. Click on the **'Browse'** button and find the file on your local computer. Click on the **'Upload File'** button to start the upload process. In the next screen select the destination folder, or create and a new folder and click **'Submit'** .

For example to set up a for **support document** a **Programmable Alert**, click on the **'Browse'** button to find the document corresponding to a Programmable Alert on your PC and select **'Upload File'**.



Configuration File (TCConfig.dat)	<input type="button" value="Choose File"/>	No file chosen	<input type="button" value="Upload File"/>
Custom Equipment File (*.xml)	<input type="button" value="Choose File"/>	No file chosen	<input type="button" value="Upload File"/>
Modbus Devices File(*.xml)	<input type="button" value="Choose File"/>	No file chosen	<input type="button" value="Upload File"/>
Document	<input type="button" value="Choose File"/>	No file chosen	<input type="button" value="Upload File"/>
Any File	<input type="button" value="Choose File"/>	No file chosen	<input type="button" value="Upload File"/>

Next choose from the drop down menu **'Alerts'** and then click **'Submit'**



The document was uploaded successfully. Where should the document be placed.

Add to an existing folder: Folder: **Alerts** (selected), Maintenance

Create a new folder: Folder:

Any File: Use this control to upload any other type of file to the r-TC. Click on the **'Browse'** button and find the file on your local computer. Click on the **'Upload File'** button to start the upload process.

If the upload completed successfully you will be brought to the following web page.

The file was uploaded successfully. The file is stored locally in the 'Storage_Card\TC\Uploads' folder. Please note that this folder is cleared out every time the r-TC is rebooted. If you would like the file to be stored permanently it must be moved manually to another folder.

Backup / Restore

This page is used to backup and restore your car wash settings.

CAR WASH CONFIGURATION 'Backup'

To create a backup of the current car wash configuration you click on the **'Backup'** button. You may enter some notes regarding your backup if you wish in the 'Notes' text box. A maximum of twenty five backups will be stored. The configuration will also be automatically backed up at the end of the day if changes are detected.

To restore a backup click on one of the dated restore links on this page. Since your current configuration will be lost you should consider backing it up before performing a restore.



If you restore a configuration the r-TC Tunnel Controller will be automatically rebooted. This should NOT be done while the car wash is use.

Notes:

Restore an Old Configuration

To restore a backup of an old configuration click on one of the dated restore links below. Since your current configuration will be lost you should consider backing it up before performing a restore.

	Version	Username	Notes
<input type="button" value="Aug 08 2018 - 08:40:05"/>	4.00.09	Auto	Backup before upgrading the software via the web interface

If you decide to restore a configuration you will receive a warning asking if you want to continue.

WARNING: If you restore this configuration the r-TC Tunnel Controller will be automatically rebooted. This should NOT be done while the car wash is in use.

Restoring configuration from Aug 08 2018 - 08:40:05.

Are you sure you want to continue?

Delete a File

This web page will allow you to delete a file (documents, XML, cab, etc.) that is stored on the r-TC.

Maintenance

jack stand.dwg 

Alarms

please order more of this at 519 766 2421.doc 

Custom Equipment Files

macneil.xml 

To delete a file, click on the red **'X'** next to each file name.

I/O Node Firmware Maintenance

This web page displays the r-TC's I/O Node firmware status. If there are any firmware issues to resolve a suggested action will also be displayed.

If the screen below appears you will need to update your firmware, simply click on the links below to update each of your I/O Nodes.

Current Status



192.168.1.81: Not responding
192.168.1.82: Not responding

Suggested Action

A non-responding I/O node is a serious failure which will disable the car wash. This may be caused by a hardware failure or a network issue. This problem cannot be diagnosed any further automatically, it is now necessary for a technician to troubleshoot the problem.

Uploading a new version of firmware to the I/O node may correct the issue if this is a new I/O node. If an existing I/O node is not communicating it is unlikely that uploading firmware to the node will solve the problem.

Use the following links to upload the correct version of firmware to the I/O Nodes.

Click here to upload firmware version 2.0 to I/O Node 192.168.1.81 
Click here to upload firmware version 2.0 to I/O Node 192.168.1.82 

If the screen below appears all I/O nodes are running properly with the correct firmware version. This screen should appear after a successful update has occurred.

Current Status

All I/O Nodes are running properly with the correct firmware version. No maintenance is required at this time.

Reboot The r-TC

This web page will allow you to safely reboot the r-TC from the web interface.

Are you sure you want to continue?

Clear Vehicles

This web page allows you to clear vehicles from the car wash.

Clear All Vehicles
Clear Vehicles From Queue

Clear All vehicles: This link will clear all vehicles from the car wash and waiting to be washed.

Clear Vehicles from Queue: This Link will only clear the vehicles waiting to be washed.

Washsoft

This page displays the current status of the r-TC's communication with WashSoft and allows the users to enable a special mode where the r-TC assumes direct control over the PBS 4000. Typically, when the r-TC is running with WashSoft, it is WashSoft that communicates directly with the PBS 4000. If WashSoft is ever unavailable, the r-TC can assume control of the PBS 4000. In this way the car wash can continue to wash cars even if WashSoft were temporarily unavailable..

WashSoft Status

There is a communication error with WashSoft!

PBS Status

The PBS is currently controlled by WashSoft, this is its normal behavior.

Would you like the r-TC to take control of the PBS away from WashSoft?

Yes

Upgrade Options

With the purchase of you r-TC software license, certain options were enabled (or were not enabled) depending on what exactly was purchased.

If at any point you decide to purchase additional options then you will need to use this web page to enter a new options key. The first step is to provide Laguna Industries with the Unit ID number displayed on this page and then obtain from Laguna Industries a new options key.

Options Key: B580-6BAB-B4F7-EE

Number of I/O Nodes Enabled: 8

Mobile PBS: Enabled

Touchscreen PBS: Enabled

ECOFLEX: Enabled

KTREXI Board: Enabled

In order to upgrade your options please contact kesseltronics for a new options key then enter this key in the space provided below.

Please provide Kesseltronics with the following Unit ID.

Unit ID: 652B-D65A-30DB-E4

WARNING: This should NOT be done while the car wash is in use.

Options Key: - - -

Enter the new options key in the spaces provided then click the submit button. On the next page verify that the options you purchased are listed as enabled in the **New** section of the web page then click **Yes** to complete the process.

<p>Current</p> <p>Options Key: B580-6BAB-B4F7-EE</p> <p>Number of I/O Nodes Enabled: 8</p> <p>Mobile PBS: Enabled</p> <p>Touchscreen PBS: Enabled</p> <p>ECOFLEX: Enabled</p> <p>KTREXI Board: Enabled</p> <p>New</p> <p>New Options Key: B57C-92C5-2D17-C4</p> <p>Number of I/O Nodes Enabled: 2</p> <p>Mobile PBS: Enabled</p> <p>Touchscreen PBS: Enabled</p> <p>ECOFLEX: Enabled</p> <p>KTREXI Board: Enabled</p>

Upgrade Software

This web page is used to remotely install a new version of the r-TC software.

First you will need to obtain the new software version from Laguna Industries. If the new version is a compressed file (Zipped) uncompress it on a PC. The new version should be an MSI file (i.e. has a .msi extension).

Installation File (*.msi): <input type="button" value="Choose File"/> No file chosen
<input type="button" value="Upload"/>

Once you have this file on your computer click on the **'Choose File'** button and find the file on your computer. Next click on the **'Upload'** button and wait for the process to complete. More instructions will follow once the upload is complete.

Please note that a reboot of the r-TC will be required to complete the installation process. You should only upgrade the software when the car wash is idle.

Registration Key

If you are upgrading your software within a branch number for example from **2.03.07 to 2.03.08** because of a bug fix you will **not** be charged and will **not** need a new **registration key**.

However if you are upgrading to new branch number because you are installing a completely new version of software you **will** be charged and it be necessary to contact Laguna Industries for a new **registration key** at **1-888-537-7358**.

You will be given a **60 day grace period** to purchase and enter your new registration key. During the time the r-TC will function normally but after the grace period the r-TC will not function at all. The status of your registration key and the amount of time remaining in the grace period can viewed on the 'Licence' tab of the touch screen and on the 'Version Information' web page.

Touchscreen

Version: 3.02.03
Unit ID: 650F-0516-4A08-54

There are 56 days remaining in the grace period of your software licence. You need to purchase a valid Software Registration Key before this period ends otherwise the r-TC will no longer function.

Enter Software Registration key

Web Interface

There are 60 days remaining in the grace period of your software licence. You need to purchase a valid Software Registration Key before this period ends otherwise the r-TC will no longer function.

[Click here to enter your Software Registration Key.](#)

To enter your new registration key go to the Licence tab on the touch screen and click on the **'Enter Software Registration Key Button'**. As well, the registration key can be entered using the web interface, simply click on the link **'Click here to enter your Software Registration Key'** found on the **'Version information'** web page.

Spy

This web page gives you access to several tools used to monitor your car wash and allows a technician to quickly diagnose any problems that might arise.

History

The History web page is used to log any important event that happens on the r-TC. This includes any alerts or warnings generated by the r-TC. As well, any time the car wash configuration is modified, a note of the change is made in the History. All entries in the History are time stamped and color coded.

- **Red** = Error
- **Green** = Error Cleared
- **Yellow** = Warning
- **Black** = Information

Feb 07 2007 - 16:28:13 Dryer override enabled by local user.
Feb 07 2007 - 16:28:12 White Wall Service override enabled by local user.
Feb 07 2007 - 16:28:10 Rim Cleaner Service override enabled by local user.
Feb 07 2007 - 16:27:38 Alarm off: Description: Low water Type: Warning Node 1, Input 8.
Feb 07 2007 - 16:27:38 Alarm off: Description: No Wax Type: Warning Node 1, Input 7.
Feb 07 2007 - 16:27:38 Configuration modified by ISI.
Feb 07 2007 - 16:27:05 Alarm on: Description: Low water Type: Warning Node 1, Input 8.
Feb 07 2007 - 16:27:05 Alarm on: Description: No Wax Type: Warning Node 1, Input 7.
Feb 07 2007 - 16:27:05 Configuration modified by ISI.
Feb 07 2007 - 16:09:59 Alarm off: Description: No Wax Type: Warning Node 1, Input 7.

Vehicle History

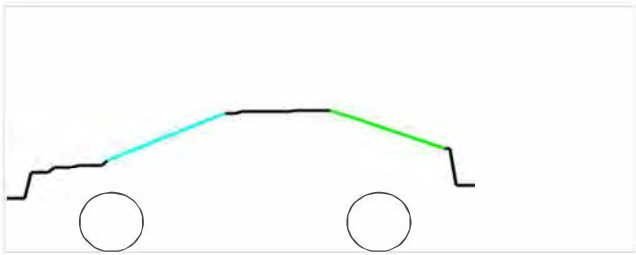
The r-TC saves the measurements it made of every vehicle. While the car is being washed this information is shown on the Tunnel Monitor web page. After the car has left this information can be viewed using the **Vehicle History** web page. You can find the vehicle you are interested in by first navigating to the day/hour that the car was washed.

- Aug 07 2018	
Aug 07 2018 1300 - Current Hour	1.40 KB
Aug 07 2018 1200	1.15 KB
Aug 07 2018 1100	1.15 KB
Aug 07 2018 1000	722.75 KB
Aug 07 2018 0900	254 B
Aug 07 2018 0800	254 B
Aug 07 2018 0700	762 B
Aug 07 2018 0600	254 B
Aug 07 2018 0500	254 B
Aug 07 2018 0400	254 B
Aug 07 2018 0300	254 B
Aug 07 2018 0200	254 B
Aug 07 2018 0100	254 B
Aug 07 2018 0000	254 B
+ Aug 06 2018	
+ Aug 05 2018	
+ Aug 04 2018	
+ Aug 03 2018	

Select the vehicle of interest to see the detailed information.

Vehicle History

Aug 07 2018 13:59:28



Vehicle ID: 2

Length: 170 inches

Height: 57 inches

Front Tire Position: 40 inches from the front of the car

Rear Tire Position: 140 inches from the front of the car

High Gate Start: 60 inches from the front of the car

High Gate End: 140 inches from the front of the car

Trunk Length: 18 inches

Open Pickup Bed Detected: No

Front Wind Shield Start: 38 inches from the front of the car

Front Wind Shield End: 83 inches from the front of the car

Rear Wind Shield Start: 122 inches from the front of the car

Rear Wind Shield End: 164 inches from the front of the car

Inputs and Outputs

The Inputs and Outputs page gives you a snapshot of the activity of the r-TC's inputs and outputs. The web page will show a green light for any input or output that is currently 'On'.

I/O Node #1

Inputs

MCR	<input type="checkbox"/>	Ultrasonic 1	<input type="checkbox"/>
Pulse	<input type="checkbox"/>	Ultrasonic 2	<input type="checkbox"/>
Gate	<input type="checkbox"/>	Ultrasonic 3	<input type="checkbox"/>
Start/Resume	<input type="checkbox"/>	Ultrasonic 4	<input type="checkbox"/>
Pause	<input type="checkbox"/>		
Roller Up Tire Sw	<input type="checkbox"/>		
Roller Detector	<input type="checkbox"/>		
Tire Detector	<input type="checkbox"/>		
Wetdown	<input type="checkbox"/>		
Power	<input type="checkbox"/>		

Outputs

1	<input type="checkbox"/>	11	<input type="checkbox"/>
2	<input type="checkbox"/>	12	<input type="checkbox"/>
3	<input type="checkbox"/>	13	<input type="checkbox"/>
4	<input type="checkbox"/>	14	<input type="checkbox"/>
5	<input type="checkbox"/>	15	<input type="checkbox"/>
6	<input type="checkbox"/>	16	<input type="checkbox"/>
7	<input type="checkbox"/>	17	<input type="checkbox"/>
8	<input type="checkbox"/>	18	<input type="checkbox"/>
9	<input type="checkbox"/>	19	<input type="checkbox"/>
10	<input type="checkbox"/>	20	<input type="checkbox"/>
An	0.0		

ECU 1911 #1

Digital Inputs

1	<input type="checkbox"/>	17	<input type="checkbox"/>
2	<input type="checkbox"/>	18	<input type="checkbox"/>
3	<input type="checkbox"/>	19	<input type="checkbox"/>
4	<input type="checkbox"/>	20	<input type="checkbox"/>
5	<input type="checkbox"/>	21	<input type="checkbox"/>
6	<input type="checkbox"/>	22	<input type="checkbox"/>
7	<input type="checkbox"/>	23	<input type="checkbox"/>
8	<input type="checkbox"/>	24	<input type="checkbox"/>
9	<input type="checkbox"/>	25	<input type="checkbox"/>
10	<input type="checkbox"/>	26	<input type="checkbox"/>
11	<input type="checkbox"/>	27	<input type="checkbox"/>
12	<input type="checkbox"/>	28	<input type="checkbox"/>
13	<input type="checkbox"/>	29	<input type="checkbox"/>
14	<input type="checkbox"/>	30	<input type="checkbox"/>
15	<input type="checkbox"/>	31	<input type="checkbox"/>
16	<input type="checkbox"/>	32	<input type="checkbox"/>

Analog Inputs

1	0.0
2	0.0
3	0.0
4	0.0
5	0.0
6	0.0
7	0.0
8	0.0

Outputs

1	<input type="checkbox"/>	17	<input type="checkbox"/>
2	<input type="checkbox"/>	18	<input type="checkbox"/>
3	<input type="checkbox"/>	19	<input type="checkbox"/>
4	<input type="checkbox"/>	20	<input type="checkbox"/>
5	<input type="checkbox"/>	21	<input type="checkbox"/>
6	<input type="checkbox"/>	22	<input type="checkbox"/>
7	<input type="checkbox"/>	23	<input type="checkbox"/>
8	<input type="checkbox"/>	24	<input type="checkbox"/>
9	<input type="checkbox"/>	25	<input type="checkbox"/>
10	<input type="checkbox"/>	26	<input type="checkbox"/>
11	<input type="checkbox"/>	27	<input type="checkbox"/>
12	<input type="checkbox"/>	28	<input type="checkbox"/>
13	<input type="checkbox"/>	29	<input type="checkbox"/>
14	<input type="checkbox"/>	30	<input type="checkbox"/>
15	<input type="checkbox"/>	31	<input type="checkbox"/>
16	<input type="checkbox"/>	32	<input type="checkbox"/>

Sensor Measurements

The sensor measurements screen displays the current value of all analog sensors.

● Outside temperature : 62.6 fahrenheit 3132 millivolts
● Inside Temperature : 81.1 fahrenheit 4053 millivolts
● I/O Node: 192.168.1.81 : 84.0 fahrenheit
● I/O Node: 192.168.1.82 : 83.0 fahrenheit
This page will refresh automatically every 15 seconds.

Configuration Report

The configuration report is a printer-friendly summary of all the settings and configurations of your tunnel controller.

Software version: 1.03.07 Firmware versions: 192.168.1.81: 1.0# 192.168.1.82: 1.0#	Car Wash Address: Kesseltronica Systems 5212 Rue Harwood Hudson Qc	General Settings: Units: inches Inches per pulse: 8.00 Minimum car length: 4 Average car length: 4 Maximum car length: 100	Shifts: Morning Afternoon Evening
System: IP Addresses of I/O Nodes: 1: 192.168.1.81 2: 192.168.1.82 IP Addresses of P...: 1: 192.168.1.71 port 2 Stacking off	Fixed Equipment Roller up: External input: None Rear wheel push Roller spacing: -1 First roller synchronized off Detector debounce: 0.0 s Dist to gate: 240 Roller sequence: 0 0 0 0 0 0 Output: Node 6, Relay 19 Conveyor: Bell time: 4 Length: 120 Oscillate ball: on Auto restart: off EAC: on EAC auto restart: on EAC sensor location: 100 EAC action: Pause No pkg action: Stop No pulse timeout: 15 Bell: Node 1, Relay 1 Conv Run: Node 1, Relay 2 Alarms: Warning: Node 5, Relay 19		
Reporting: Receipts printed at the printer at the i-TC panel. Shift reports printed at the printer at the i-TC.	Node 1 outputs: Name PT FO INV FL Na Rust Inhibitor Menu Wheel & Tire Menu En 2nd Hot Soap Menu En Extreme Bumper Blast Tripple Shine Menu E Clear Coat Menu Entr Compressor Bleed Extreme Dry Menu Ent Extreme Wash Sign En Premium Wash Sign En	Entrance Door Reg Delay off: 36 Rus Close bell: 1 Whi Winter mode 2nd Close Every car 3rd Close 4th Continuous signal off 5th Open Node 5, Relay 11 6th Close Node 5, Relay 12 7th Bell Node 1, Relay 20 Sump Pump Open: Node 5, Relay 15 Make Up Air Unit Run: Node 5, Relay 20	Confirmation sign ex On with front, off with back Location: 101 Delay off: 5 Look ahead distance: 30 Dryer Top Section On with front, off with back Location: 108 Delay off: 5 Look ahead distance: 30 Dryer Side Section On with front, off with back Location: 108 Delay off: 5 Look ahead distance: 30 Dryer Future Section On with front, off with back Location: 110 Delay off: 5 Look ahead distance: 30
Node 2 outputs: Name PT FO INV FL Na Extreme Wash Sign Ex Premium Wash Sign Ex Regular Wash Sign Ex Blind Neon 1st Hot Soap Neon Wheel Cleaner Neon 2nd Hot Soap Neon Bumper Prep Neon Foaming Wax Neon Rust Inhibitor Neon	Active Equipment Car Wash Requested Menu items premium e 1: Node 1, Relay 1 2: Node 1, Relay 2 Confirmation Sign Re 1: Node 1, Relay 11 Prewash Rinse Arch Location: 5 Flip activation at half car Soap 1A Arch Location: 14 Flip activation at half car Light Bar Output Node 2, Relay 5 Front Bumper Prep On with front, off with front Location: 25 Delay off: 5 Rear Bumper Blast On with back, off with back Location: 35 Pre start: 5 Delay off: 5 Turret Gatling gun Location: 47 Pre start: 3 Delay off: 3 Tire flip run distance: 5 Tire flip off with back of vehicle	Static Gatling Gun E Tire flip off with back of vehicle Menu items extreme e 1: Node 1, Relay 4 2: Node 1, Relay 8 Confirmation Sign Pr 1: Node 1, Relay 10 Tire Cleaner #1 Location: 11 Soap 1B Arch Location: 14 Flip activation at half car Tire Cleaner #2 Location: 26 Under Body Wash On with front, off with back Location: 40 Front Bumper Blast On with front, off with front Location: 58 Pre start: 8 Delay off: 8 Combo Cleaner Side Location: 60 Pre start: 5 Delay off: 5 Flip activation at half car Tripple Foamer On with front, off with back Location: 65 Pre start: 2 Front Bumper Blast On with front, off with front Location: 79 Pre start: 5 Delay off: 5 Spot Free Rinse Location: 87 Flip activation at half car	Wash Packages Name O P X E S R L Extreme Wash on on on Premium Wash on on on Regular Wash on on on Express Wash on on on White Wall on on on Basic Soap 2 Arch Wash Service Entrance Body Wash Wash Service Rain Arch Wash Service Extreme Wash Wash Requested Wash Service Entrance sign group extreme Prewash Arch Wash Service Tire Cleaner #1 Wash Service Tire Cleaner Neon Wash Service Soap 1A Arch Wash Service Front Bumper Prep Wash Service Tire Cleaner #2 Wash Service Rear Bumper Blast #1 Wash Service Rear Bumper Blast #2 Wash Service Turret Gatling gun Wash Service Bumper Blast Front #1 Wash Service Rust Inhibitor Wash Service Tripple Foamer Wash Service Clear Coat Arch Wash Service Exit sign group extreme Dryer Top Section Wash Service Dryer Side Section Wash Service Express Wash Drying Agent Arch Wash Service White Wall Tire Cleaner #1 Wash Service Tire Cleaner Neon Wash Service Soap 2 Arch Wash Service Tire Cleaner #2 Wash Service Front Bumper Blast #2 Wash Service
Input Assignment: MCR: Node 1, Input 1 Pulse: Node 1, Input 4 Start: Node 1, Input 4 Pause: Node 1, Input 4 Roller Det: Node 1, Input 7 Tire Det: Node 1, Input 7 Power: Node 1, Input 10 Exit: Progress Det High Gate: Entrance Lim Entrance Eye Close Entrn Exit Limit: Open Exit Close Exit: Presence Det	Input alarms: Temperature alar...	Menu items regular e 1: Node 1, Relay 14 2: Node 1, Relay 17 3: Node 1, Relay 18	Wash services Wash Request: Car Wash Req Static Gatli: Static Gatli Entrance sig: Menu Items r Confirmation Entrance sig: Menu Items p Confirmation Trench Sump: Trench Sump Prewash Arch: Prewash Rins Tire Cleaner: Tire Cleaner Soap 1A Arch: Soap 1A Arch Soap 1B Arch: Soap 1B Arch Front Bumper: Front Bumper Tire Cleaner: Tire Cleaner Rear Bumper: Rear Bumper Rear Bumper: Rear Bumper Under Body W: Under Body W Rear Bumper: Rear Bumper Turret Gatli: Turret Gatli Bumper Blast: Front Bumper Combo Clean: Combo Clean Combo Clean: Combo Clean Rust Inhibit: Rust Inhibit Tripple Foam: Tripple Foam Rain Arch Wa: Rain Arch HP Rinse Arc: HP Rinse Arc Front Bumper: Front Bumper Drying Agent: Drying Agent Clear Coat A: Clear Coat A Spot Free Ri: Spot Free Ri Exit sign gr: Menu Items r Confirmation Exit sign gr: Menu Items p Confirmation Exit sign gr: Menu Items r Confirmation Dryer Top Se: Dryer Top Se Dryer Side S: Dryer Side S Dryer Future: Dryer Future
PBS 4000 Key Pad Assignment: 1 Extreme Wash 2 Premium Wash 5 White Wall	Default Wetdown	Abbreviation legend PT: Power up time FO: System stop - force on INV: Inverted FL: Flashing O: Option P: PBS 4000 X: External E: Ethernet S: Auto start R: Auto roller L: Extended length EAC: Exit anit collision Wm: Warning FW: Finish Wash Fsa: Pause Conveyor Stp: Stop Conveyor Dly: Delay Nbl: Neutral Fwd: Forward Pkg: Wash package	

Tunnel Monitor

The Tunnel monitor page gives you a snapshot of the vehicles which are currently being washed or waiting to be washed. Some basic information is provided for each vehicle, as well as the conveyor speed in pulses per hour.

Vehicles Currently in the Wash						
State	Wash Package	ID	Pulse	Length	Front Tire Position	Rear Tire Position
Washing	Wash 1	2	27	17	4	14
Loading	Wash 1	3	0	10		

Conveyor Speed: 3529 pulses per hour
0.82 ft/s
207 cars per hour

So far this hour the car wash is operating at 1% of its maximum capacity.

The r-TC calculates the total distance that the conveyor travels in one hour by using the following calculations:

Total Distance Traveled = Total Pulse per hour *length/pulse

Then define the average total length of a car as: Average length as defined in the setup screen + 6' (this is the average distance between two cars)

Finally the r-TC divides the total distance traveled / hour by this number and this yields the Total cars/hour that you can wash.

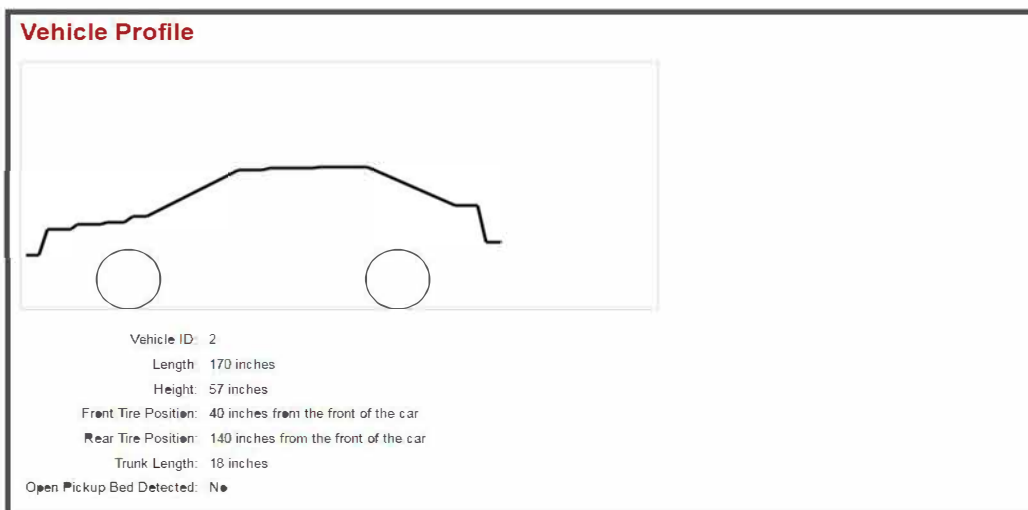
If you are using the Vehicle Profiler (**see page 60**) then you will also be able to use this web page to see an outline of each vehicle as measured by the Ultrasonic Sensor.

Vehicles Currently in the Wash						
State	Wash Package	ID	Pulse	Length	Front Tire Position	Rear Tire Position
Washing	Wash 1	14	29	17	4	14
Loading	Wash 1	15	0	10		

Conveyor Speed: 3546 pulses per hour
0.82 ft/s
208 cars per hour

So far this hour the car wash is operating at 9% of its maximum capacity.

Click on the **“click here to view profile”** link to see the profile and measurements of the vehicle.



Warnings

The Warnings page lists any warnings concerning the setup of the car wash. Please note that this page only displays setup issues and does not display any alerts or other errors that are already reported on the car wash home page.

Wash services not assigned to any wash package or option:

- Static Gatling Gun Entrance Wash Service
- Trench Sump Pumps Wash Service
- Rear Bumper Prep Wash Service
- Combo Cleaner Top Wash Service
- Combo Cleaner Wash Service
- Combo Cleaner Parallelogram Wash Service
- HP Rinse Arch Wash Service
- Spot Free Rinse Wash Service
- Dryer Future Section Wash Service

Email

The r-TC email utility can be set up to send out financial reports to owners or managers, or to send out warnings whenever an alert is activated.

To activate the email utility check the **'Enable email reporting'** check box then click on the apply button to display the email controls. You will also have to setup your router to allow email functions.

Enable Email Reporting:

Apply **Submit**

For email to function, the r-TC must have its own **email account**. Enter the **server name, email address** of the r-TC, and, if necessary, the **username** and **password** for the account. This information is available from your email provider. Once complete click on the apply button to make the changes permanent.

Enable Email Reporting:

SMTP Server:

Email address:

Username:

Password:

Using an SSL Mail Server:

Apply **Submit**

Recipients

maple555@generalmail.com

The next step is to add the email addresses of the recipients of the emails. Click on the **Add** link to create a new email recipient. Enter the recipient's **email address** and **check off the check boxes** to determine which emails will be sent to this recipient. Once complete click on the apply button to make the changes permanent.

Address:

Select the emails that this recipient should receive.

Shift Reports: Warnings when an alert is active:
 Daily Reports: Warnings when the configuration is modified:
 Weekly Reports: Regular car wash updates via text message:
 Monthly Reports: Copies of messages posted on the message board:
 Daily Reports for Vending Machines: Warning whenever the r-TC is restarted:
 Weekly Reports for Vending Machines:
 Monthly Reports for Vending Machines:

Shift reports: An email will be sent every time a shift is ended showing a report of the cars washed during that shift and the cash collected.

Example of a Shift Report

```

Kesseltronics Systems
5212 Harwood Blvd
Hudson
Quebec
JOB 1H0
888 537 7358

Shift Report
Morning

Report Sequence Number: 143
From:Jul 10 2007 - 11:51:00
To:Jul 10 2007 - 11:58:30

COUNTERS          %  Cars    P/O
Basic Wash        50    5       PKG
Deluxe Wash       20    2       PKG
Ultimate Wash     30    3       PKG
Underbody Treatment  10    1       OPT
Limo wash         0     0       OPT
Default Package   0     0       PKG

$ COLLECTED          AMOUNT
Basic Wash           40.00 $
Deluxe Wash          20.00 $
Ultimate Wash        36.00 $
Underbody Treatment   2.00 $
Limo wash             0.00 $
Default Package       0.00 $

Total : 98.00 $

Date : Jul-10-2007
Time : 11:58
  
```

Daily reports: An email will be sent at the end of each day showing a report of the cars washed during that day and the cash collected.

Weekly reports: An email will be sent at the end of each week showing a report of the cars washed during that week and the cash collected. The r-TC's week is from Monday to Sunday.

Monthly reports: An email will be sent at the end of each month showing a report of the cars washed during that month and the cash collected.

Daily reports for Vending Machines: An email will be sent at the end of each day showing a report of the cash collected.

Weekly reports for Vending Machines: An email will be sent at the end of each week showing a report of the cash collected. The r-TC's week is from Monday to Sunday.

Monthly reports for Vending Machines: An email will be sent at the end of each month showing a report of the cash collected.

Warning When An Alert is Active: An email will be sent when an alert is active. Only alerts that have the **“Notify By Email”** check box selected will generate an email message **(see page 49)** . A second email will be sent when the alert is cleared. A filter is used to make sure the recipient is not flooded with emails when an alert is intermittent.

Example of an Alert Email

The following alert was activated Jul 10 2007 - 12:02:08

Description: Low water

Type: Warning

Modifications: An email will be sent whenever any user changes the configuration of the car wash. A filter is used to make sure the recipient is not flooded with emails when a user is making several changes to the configuration.

Text Message Schedule

The web page allows you to schedule text messages that will contain some basic financial statistics. Text messages will be sent to email recipients with the option **‘Regular car wash updates via text message’** enabled **(see previous page)**.

Auto: Start at: 8:00 am

Hourly: End at: 9:00 pm

Daily:

Which days of the week would you like to receive text messages

Sunday:

Monday:

Tuesday:

Wednesday:

Thursday:

Friday:

Saturday:

Apply **Submit**

Documents

The **'Documents'** web page will display any PDF or JPEG files that were installed on or uploaded to the r-TC. Just click on any of the titles/links to open the document (**see page 100**).

Maintenance

- event1.pdf
- event2.pdf
- event3.pdf

r-TC Manuals

- r-tc setting the nodes ip address.pdf
- r-tc installer manual 104xxr.pdf
- r-tc user manual 104xx.pdf

Access Interface Tellers

This web page is designed to give some basic diagnostic information regarding tellers that are communicating with the r-TC. This information is limited to tellers using the PDQ Access interface. This page is only available if the Access Interface is enabled (System Setup -> Access Interface Setup).

Flags for Tellers

Wash Busy : TRUE

Wash Open : TRUE

Maintenance Mode : FALSE

Active Tellers

Ip Address of Teller	Time since last Message from Teller	Time of last Message from Teller
127.0.0.1	265 ms	Aug 04 2021 - 13:14:44

Flags for Tellers: These are the current values of the flags that are communicated to the tellers.

Active Tellers: If a teller has communicated successfully with the r-TC (since the last reboot of the r-TC) it will appear in this list.

Logs

This web page gives you access to some logs that are kept by the r-TC. These logs document the back and forth communication between the r-TC and external devices. The intention is to allow users to trouble-shoot communication issues between the r-TC and external devices such as tellers. The logs are limited in size so only recent messaging will be available.

XML Interface

- Access Interface
- Chrysler Modbus
- cortex Server

Remote Device Statistics

Access Interface Communication Log

Please note that the most recent events are at the top of this page.

```
Aug 04 2021 - 13:40:16 : 127.0.0.1 : send -> 02 07 00 00 01 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Aug 04 2021 - 13:40:16 : 127.0.0.1 : recv -> 02 07 00 00 00 00 00 01 01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Aug 04 2021 - 13:40:15 : 127.0.0.1 : send -> 01 07 00 00 01 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Aug 04 2021 - 13:40:15 : 127.0.0.1 : recv -> 01 07 00 00 00 00 00 01 01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Aug 04 2021 - 13:40:14 : 127.0.0.1 : send -> 00 07 00 00 01 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Aug 04 2021 - 13:40:14 : 127.0.0.1 : recv -> 00 07 00 00 00 00 00 01 01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

Please note that the XML Interface is used by several different types of devices including tellers and the Touchscreen PBS. In order to save space in the log, most messages from the PBS 5000 are not shown here.

Remote Devices Talking to the r-TC

This page was added to monitor the volume of traffic from external devices to the r-TC. In particular, to make sure one device is not overloading the r-TC with messages.

Touch Screen

The computer running the Tunnel Controller application is equipped with a touch screen monitor. This touch screen can be used to view statistics, monitor the operation of your tunnel controller, and also contains useful tools for testing equipment and troubleshooting problems.

Login
The 'Login' screen will be visible if it is enabled on the **User Privileges** page (See page 20 for more details). Users must login to use the touchscreen using the the same username and password as for the web interface.

You may sign in as a guest (no password required) with limited tabs. The tabs are configured on the **User Privileges** page of the web interface. (See page 20 for more details).

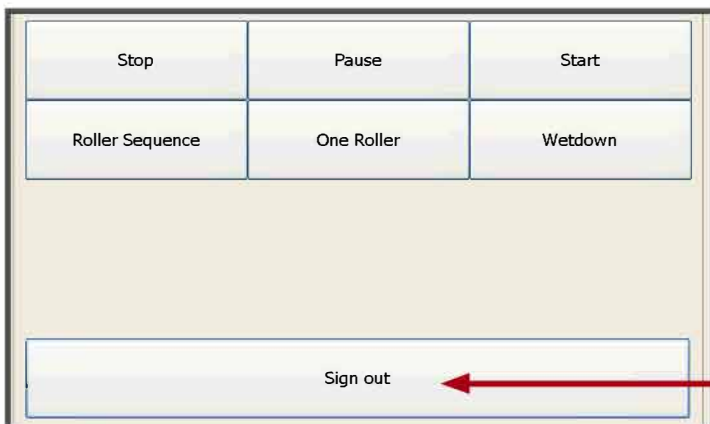


Touch Screen Tabs

The user interface displayed on the touch screen monitor contains the following tabs, please note that not all tabs will be available to all user levels.

Operator Screen

The 'Oper' tab contains buttons that allow an operator to control some of the equipment in the car wash. For example, the operator can start, stop or pause the conveyor, open or close doors, and start or stop the wetdown.



Use the 'Sign Out' button to end your session

Stats / Today's Stats

The **'Stats'** tab displays some general information concerning the r-TC including the software version. Also included in the tab are the daily and cumulative totals of cars washed at your car-wash (itemized by wash package).

'Today's Stats' is similar to the **'Stats'** tab with the exception that only daily totals of cars washed (itemized by wash package) are displayed.

Note: This tab is only visible if it has been selected for a user level on the 'User Privileges' web page. (see **page 20** for more details)

Software Version 3.00.17		
Wash Pkg	Today's Total	Total
Wash 1	0	126
Wash 2	0	40
Wash 3	0	30
Wash 4	0	24
5	0	8
6	0	13
7	0	6
8	0	5
9	0	5
Default	0	5
Cars Washed	0	207
Length Violations	0	5

Software Version 3.00.17	
Wash Pkg	Today's Total
Wash 1	0
Wash 2	0
Wash 3	0
Wash 4	0
5	0
6	0
7	0
8	0
9	0
Default	0
Cars Washed	0
Length Violations	0

Shift

The shift tab is used by employees to start and end their shifts. To start a shift, select your shift from the drop down box then press the **'Start'** button. To end your shift press the **'End'** button.

Employees may also start and end their shifts using a PBS 4000.

The user may print the previous shift report, by clicking at the bottom of the screen after the **'End'** button has been pressed.

No shift active. Select a shift then press the start button.

Morning

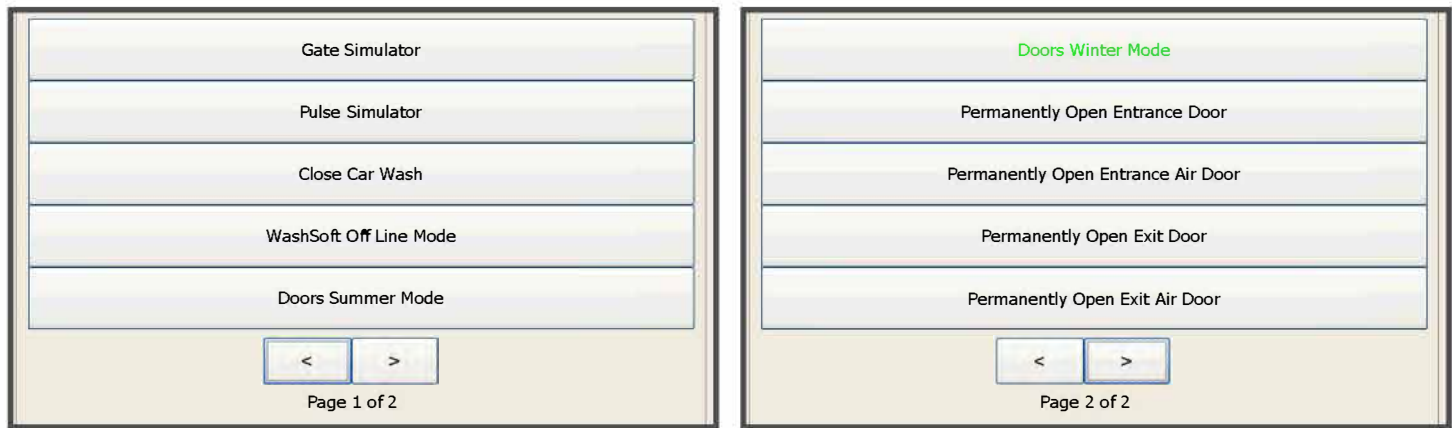
Start

Active shift: Morning.
Press the end button when your shift is over.

End

Tools

The tools tab gives an operator or technician easy access to some of the r-TC's tools.



Note: Once a button has been turned on the button text will turn Green.

Gate Simulator: Use this button to activate the gate simulator in the event of a failure of the car wash's gate sensor. This will allow the r-TC to continue washing cars until the gate is fixed. The gate simulator is configurable using the r-TC's web interface.

Pulse Simulator: Use this button to activate the pulse simulator in the event of a failure of the car wash's pulse detector. This will allow the r-TC to continue washing cars until the pulse detector is fixed. The pulse simulator is configurable using the r-TC's web interface.

Close Car Wash: The car wash can be configured to close outside of normal operating hours. Use this button to force the car wash closed during times when it would normally be open (for example to perform maintenance).

WashSoft Off Line Mode: This button is used to put the r-TC into a special mode when WashSoft is not available. In this special mode the r-TC assumes control of the PBS and cars can still be washed. This button will only be visible on car washes that run with WashSoft.

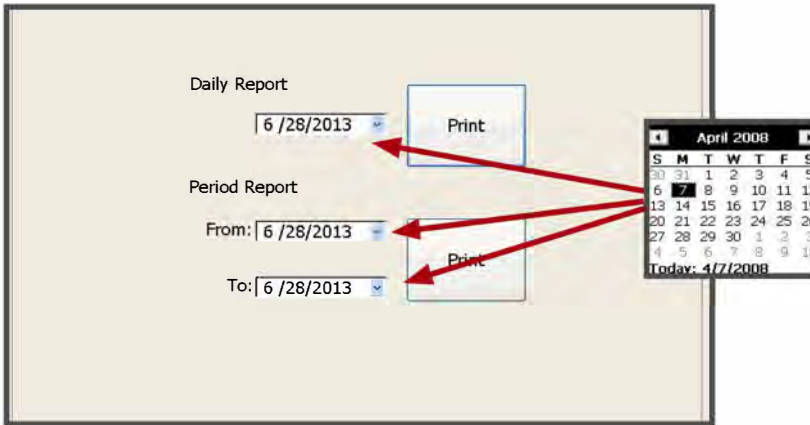
Doors Summer Mode and Doors Winter Mode: These buttons provide a quick way to change the season mode of the car wash doors. These buttons will only be available on car washes that use the r-TC door controls.

Permanently Open Doors: These buttons are used in the case of a door failure. If a door has failed and has then been locked open by a technician, then use these buttons to inform the r-TC that the door has been taken out of service. The r-TC will then stop trying to close the door and cars can continue to be washed despite the malfunctioning door.

Report

The report tab is used to print daily or period reports on the thermal printer. This tab is only visible if a printer has been assigned to daily/period reports on the **'System Setup'** web page, see **page 25**.

The r-TC stores financial data for up to two years. To print a daily report for any date that is less than two years old, use the date picker to select the desired date then click on the print button. The report will be printed on the thermal printer.



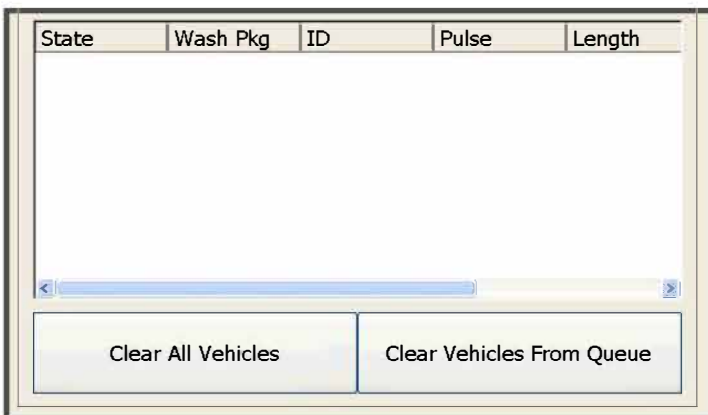
To print a period report for any range of dates that are less than two years old, use the date pickers to select the desired dates then click on the print button. Both end dates are included in the period report totals. **(see picture above)**

Vehicle

The **'Vehicle'** tab displays a list of vehicles that are currently being washed or are waiting in the queue to be washed. Some basic information concerning each vehicle is also displayed including the car length, position measured in conveyor pulses, the wash package selected for the vehicle, and the position of the vehicle.

The **'Clear All Vehicles'** button, will remove all vehicles currently being washed and all vehicles waiting in the queue to be washed.

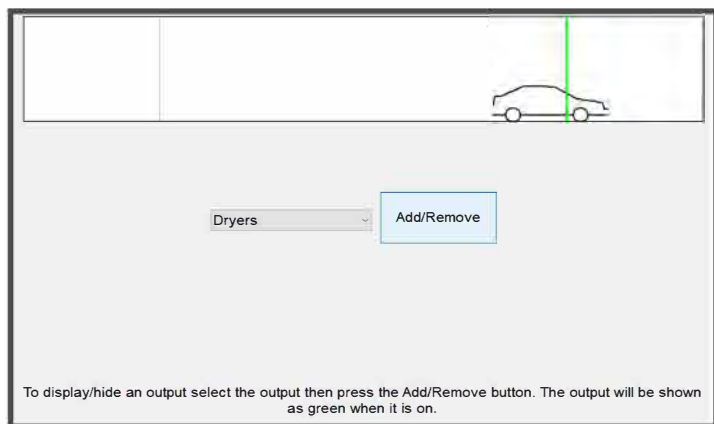
'Clear All Vehicles From Queue' button, will only clear all the vehicles waiting to be washed.



Tunnel

The **'Tunnel'** tab gives you a live view of the cars currently being washed. An animated version of each car will be displayed and moved across the screen as the real car moves through the wash. All dimensions are scaled down but in correct proportion to the length of the conveyor and to each other. If the Vehicle Profiler is being used then the car will be displayed as it was read by the ultrasonic sensor. If the Vehicle Profiler is not enabled then the car will be represented by a rectangle whose length is based on the length measured by the gate eye.

On this tab, it is also possible to monitor pieces of equipment, in particular their location and activation. From the drop down box, select an output belonging to the piece of equipment of interest. Click Add/Remove and a vertical line will appear on the screen at the location of the equipment in the carwash bay. If the equipment is off the line will be black, in the equipment is on the line will be green. You can add as many pieces of equipment as you like. If the screen gets too cluttered, the Add/Remove button can be used to remove equipment that is already displayed.



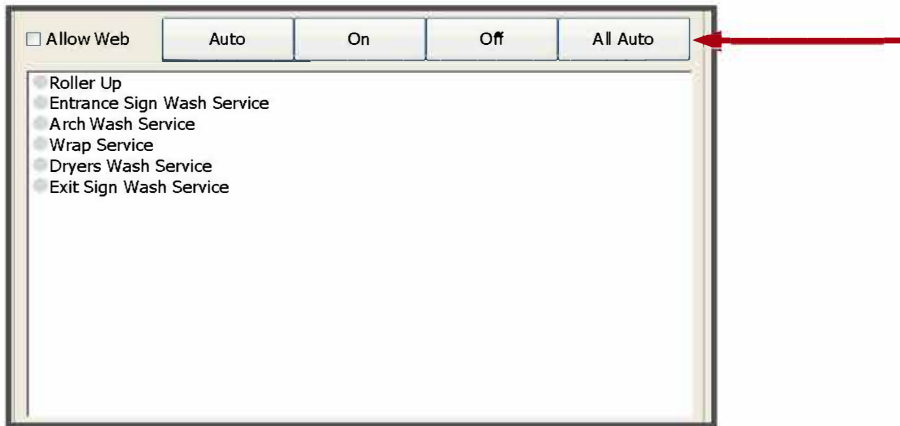
Overrides

The overrides tab is similar to the **'Overrides'** web page mentioned earlier. The overrides tab is used to test the equipment included by forcing on all pieces of equipment on. The Overrides tab can also be used to temporarily disable equipment, in this case the pieces of equipment will be forced off even if a car is being washed and the equipment would normally turn on.

For safety reasons, the ability to force on a piece of equipment is by default not available from the web interface. To enable this feature check off the 'Allow Web' check box.



*For safety reasons, this utility should not be used when the car wash is open and anyone working in the car wash should be made aware that you are starting pieces of equipment. It could be hazardous to a vehicle or a person to have a piece of equipment turn on suddenly. It is important to remember to uncheck the **'Allow Web'** box when testing is complete, otherwise a user might log in later and turn on pieces of equipment while the car wash is running.*



Alerts

This tab displays any alert that is currently active on the r-TC.



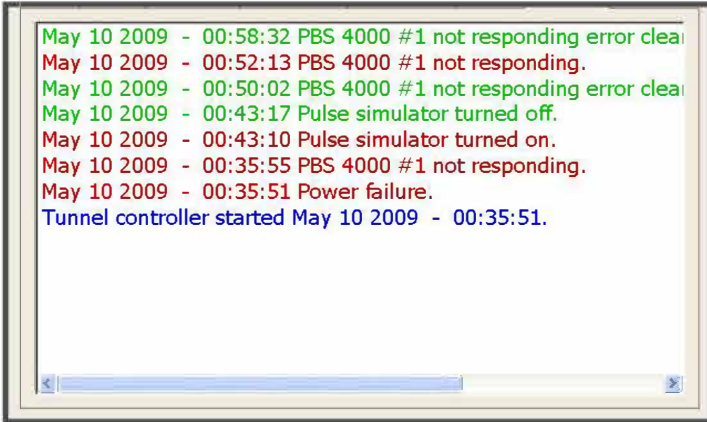
Release All Alerts That Are Latched On: Selecting this button will release all active Alerts which are **'Latched'**.

History

The History tab is used to log any alerts that have occurred. A maximum of 30 entries are kept in the list.

All entries in the history tab are time stamped and color coded.

- **Red** = Error Detected
- **Green** = Error Cleared



I/O

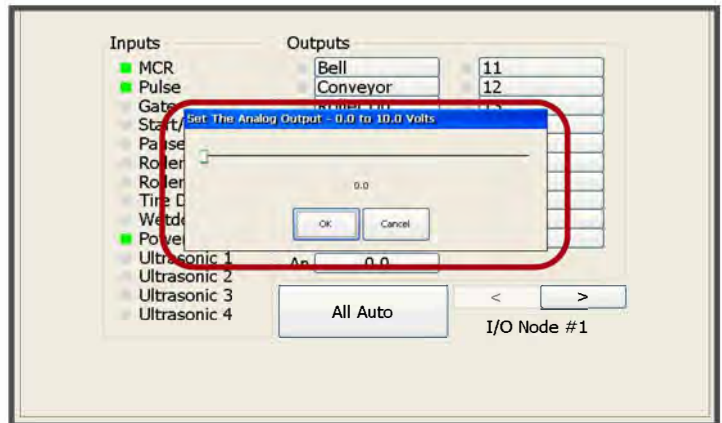
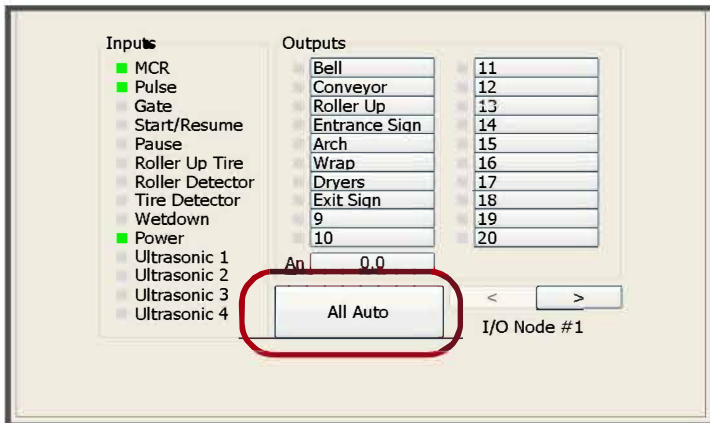
The 'I/O' tab provides similar functionality to the 'Inputs and Outputs' web page. The tab gives the user a snapshot of the activity of the r-TC's inputs and outputs. The tab will show a green light for any digital input or output that is currently 'on'. For analog inputs and outputs instead of a light the analog value is displayed in volts.

This tab also allows users to manually force on an output. This is similar to the functionality of the overrides tab, but in this case a single output is activated as opposed to all the pieces of equipment. To turn a digital output on or off simply click on the output's button.

Each I/O node has one analog output which can also be forced on. Simply click on the analog output's button and use the slider to select the desired voltage to which the analog output should be forced.



For safety reasons, this utility should not be used when the car wash is open and anyone working in the car wash should be made aware that you are starting pieces of equipment. It could be hazardous to a vehicle or a person to have a piece of equipment turn on unexpectedly.



Please note that Virtual Outputs can also be overridden from this tab. If you keep clicking the ">" button, the last page will be for Virtual Outputs.

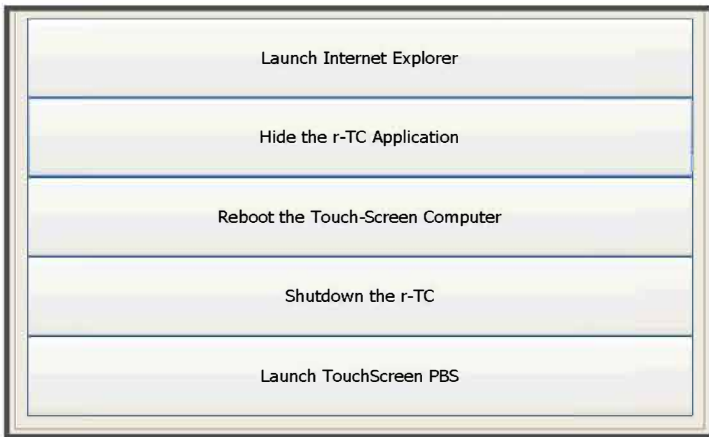
Sensors

The **'Sensors'** tab is used to display the current value of all sensors connected to the r-TC as well as the current temperature of each of the I/O nodes. The value of the sensor measurement is given in the units of the sensor as well as in millivolts. If a sensor is currently generating an alert then the sensor and its measurements will be displayed in red.

Name	Current Value	Millivolts
RH Water Level	0.00 inches	0
Inside Temperature	-273 Celsius	0
Outside temperature	-273 Celsius	0

Admin

The Admin tab allows an advanced user to perform administrative tasks.



Hide the r-TC Application: If it is necessary to access a folder on the Touch Screen Computer, the r-TC application can be hidden revealing the Windows Desktop. While it is hidden, the r-TC application it will continue to run and cars will continue to be washed.

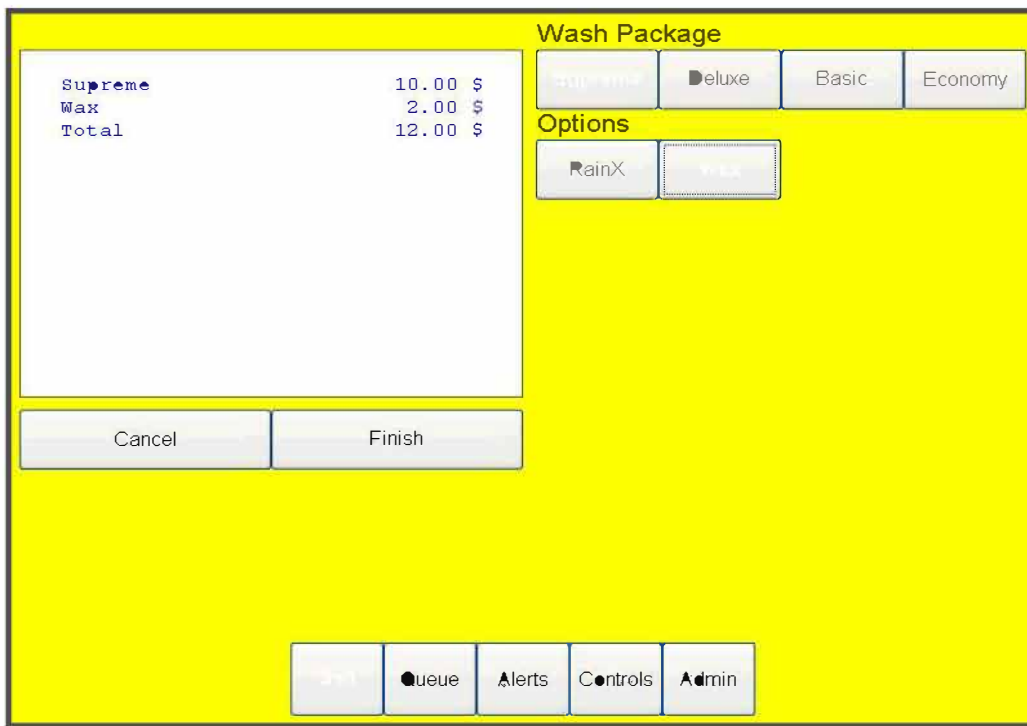
To reveal the r-TC application click on the **“Show Hidden icons”** button in the task bar (the up arrow) then click on the **r-TC icon**.



Reboot the Touch Screen Computer: Sometimes it might be necessary to reboot the touch screen computer, for example, after installing a new version of the r-TC software. It is preferable to use this button to reboot the touch screen computer (as opposed to turning off the power to the computer or by rebooting using Windows) since the r-TC will save any required data before rebooting.

Shutdown the r-TC: Sometimes it might be necessary to shutdown power to the r-TC touch screen computer. Before doing so, push this button so that the r-TC can save any required data before power is lost.

Launch TouchScreen PBS : Use this button to activate the TouchScreen PBS on the r-TC’s touch-screen computer. Cars washes can then be sold from the TouchScreen. The TouchScreen PBS is an options and the button to launch it will only appear if you have purchased this option as part of your software license.



To close the TouchScreen PBS and return to the r-TC's tabs, go to the Admin tab and then click on the "Return to the r-TC" button.



Test Chemicals

The r-TC's **'Test Chemicals'** feature is intended to be used by the chemical supplier of your car wash. It allows the supplier to force on equipment similarly to the r-TC's **'Overrides'** features, but the user is limited to only certain pieces of equipment. The intention is that a chemical supplier will be able to test if the equipment he has resupplied is now working correctly without giving the supplier the ability to override any other pieces of equipment.

For each piece of equipment that might involve chemicals, there is a check box that must be enabled in order for this equipment to be made part of the **'Test Chemicals'** feature. This check box can be found on the web page used to configure that piece of equipment.

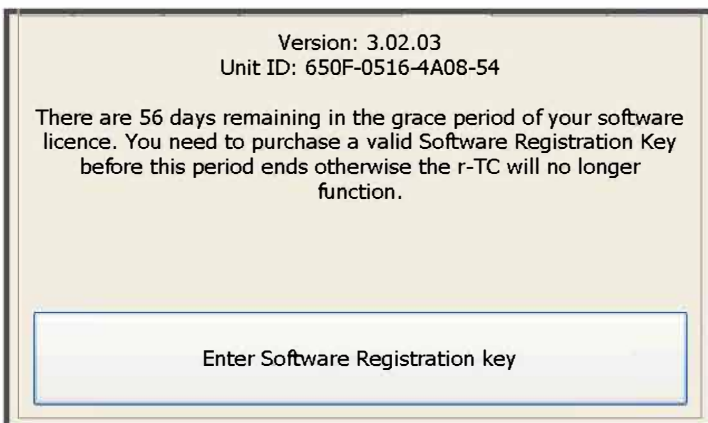
The chemical supplier can activate/deactivate this equipment using the toggle buttons found on this tab. Please note that if no pieces of equipment are enabled for this feature then the **'Test Chemicals'** tab will not appear on the touch screen.

For more details on how to configure this feature see **page 30**.



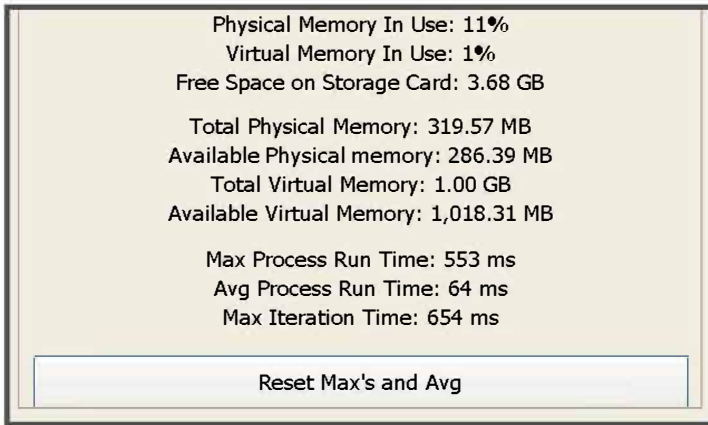
License

This tab displays information concerning your software licence and the version number of the r-TC. If you do not currently have a valid licence you will still be able to wash cars until your grace period expires. If you are within your grace period then this tab can be used to enter a valid software licence.



Diagnostic

This tab provides some diagnostic information on the health of the touch screen computer.



Physical Memory In Use: 11%
Virtual Memory In Use: 1%
Free Space on Storage Card: 3.68 GB

Total Physical Memory: 319.57 MB
Available Physical memory: 286.39 MB
Total Virtual Memory: 1.00 GB
Available Virtual Memory: 1,018.31 MB

Max Process Run Time: 553 ms
Avg Process Run Time: 64 ms
Max Iteration Time: 654 ms

Reset Max's and Avg

The image shows a diagnostic window with a light beige background and a dark border. It contains several lines of text providing system metrics. At the bottom, there is a button labeled 'Reset Max's and Avg'.

Washing Cars with An Attendant

1 - Make sure the car is positioned properly before selecting the program. This means that it is not blocking the gate switch (AKA entrance Photo eye) and the wheels are placed in the right position for the Roller to come up and push the car. The car should be in Neutral and no brakes applied to it.

2 - Select the Package and any Options by using the Program Keys. You should see the name of the program on the PBS screen, and all corresponding lights come on.

3 - If the conveyor is stopped, you will need to press START, unless the programmed buttons have an Auto-Start defined.

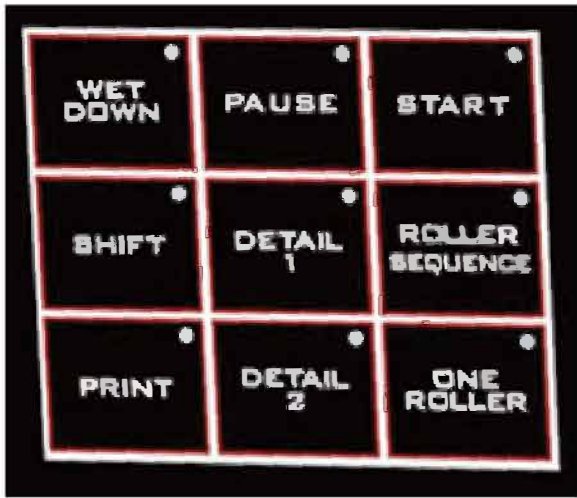
4 - If no Rollers come up (not configured as Auto-Roller) use the ONE ROLLER or the ROLLER SEQUENCE keys to call them up. These keys are also used to cancel any undesired Rollers.

5 - Make sure all the rollers you requested for this car are gone before you bring the next car into position, return to step 1.

In case of an emergency, use the EMERGENCY STOP button. Do not use this button to pause the conveyor if it is not an emergency. The PAUSE key is to be used during normal operation.



PBS4000 | Basic Car Wash Controls



These controls allow a user to control the basic functions of the car wash.

Wet Down

Press this button to start the **wet down**. All of the pieces equipment included in the Wetdown wash package will be activated. After two minutes the equipment will automatically shut off. To stop the wetdown earlier, simply press the **wet down** button again. The LED on the wetdown button will be illuminated while the wetdown is in progress.

Pause

Press this button to pause the conveyor. Some pieces of equipment may remain active while the conveyor is paused (depending on how they are configured).

Start

Press this button to start the conveyor. The small light on the Start button will be illuminated while the conveyor is running.

Stop

Press this button to stop the conveyor. All the car wash equipment will also be stopped.

Detail 1

Use this button to start or stop the Detail 1 equipment. The Detail 1 equipment must be added to the car wash and configured through the r-TC's web interface.

Detail 2

Use this button to start or stop the Detail 2 equipment. The Detail 2 equipment must be added to the car wash and configured through the r-TC's web interface.

Roller Sequence

Press this button to call up a sequence of rollers. The pattern and number of rollers can be configured through the r-TC's web interface. Pressing this button a second time will cancel the roller sequence in progress.

One Roller

Press this button to call up a single roller. Pressing this button a second time will cancel the roller (if it has not already been called up).

Print

Press this button to print a receipt for the 'current car' (we will explain what is meant by the 'current car' a bit later on). Once a receipt is printed it will no longer be possible to add or remove any options to the car (except for free options). Only one receipt can be printed per car.

Shifts

If shifts are not enabled on the r-TC then it is not necessary to start or end shifts. If shifts are enabled then a user must start his shift before he can wash cars using the PBS 4000.

Starting a Shift

If no shift is active the following message will appear on the PBS 4000.

No Shift Active
Press SHIFT to start your shift

As instructed, press the **SHIFT** button. The name of a shift will appear in the top line of the LCD display. Use **PRV** the **NXT** and (previous and next) keys to navigate through the list of shift names until the correct shift is found.

Afternoon?
Use PRV and NXT keys to find your shift then press SEL

Pressing the **SEL** (select) button starts the shift that is currently displayed. The top line of the LCD now displays **"Ready!"** indicating that the PBS is now ready to be used to wash cars.

Ready!

Ending a Shift

To end a shift already in progress press the **SHIFT** button.

End your shift?
Press SEL to end your shift, press ESC to continue the current shift

Pressing the **ESC** (escape) button aborts the operation and the current shift remains active. Pressing the **SEL** button confirms that the shift is ended, a shift report will be printed automatically. The user is then given the option to print another copy of the shift report.

Another copy?

Press Sel to print a copy of the shift report, press Esc to continue exiting the shift

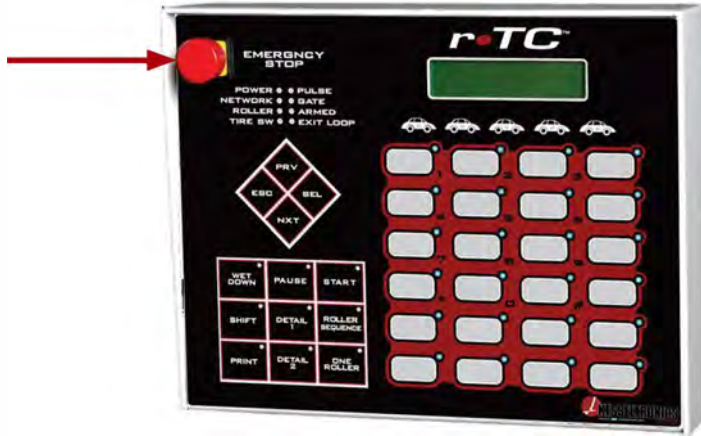
If the r-TC is not equipped with a printer then this step will be skipped.

End your shift?

Press SEL to end your shift, press ESC to continue the current shift

Emergency Stop

Pressing the Emergency Stop button will shut off electrical power to all of the r-TC's outputs, effectively shutting down all the car wash equipment including the conveyor. Pull the button out to release the emergency stop.



Indicator Lights

The PBS has several indicator lights to provide some basic diagnostic information.



Power

This light will be on if the PBS is powered. This light does not reflect the status of the r-TC's power input.

Network

This light will be on while the PBS has a communication link to the r-TC.

Roller

This light will be on whenever the r-TC's roller detector input is on.

Tire SW

This light will be on whenever the r-TC's tire detector input is on.

Pulse

This light will be on whenever the r-TC's pulse input is on. It should flash regularly while the conveyor is running.

Gate

This light will be on whenever the r-TC's gate input is on.

Armed

This light will be on whenever the r-TC's MCR input is on.

Exit Loop

This light will be on whenever the r-TC's exit anti-collision input is on.

Washing Cars

The PBS is used to give a car a wash package and to add whatever options are desired. Once the car enters the wash (reaches minimum car wash length in the gate), the PBS will no longer be aware of the car.

The PBS can be set to run in two different modes configurable through the r-TC's web interface; stacking on and stacking off. If stacking is off, then the PBS will deal with one car at a time. A new car can only be added once the previous car has entered the wash. If stacking is on then the PBS can manage a queue of up to five cars waiting to enter the wash.

Please note that if shifts are enabled then the user must start his shift before he will be able to wash cars.

Stacking OFF

Adding a Car

If the PBS is ready to accept a new car, the LCD display will display **'Ready!'** First give the car a wash package by selecting the desired wash package from the key pad. The LCD will display the name of the selected wash package. If another wash package is now selected, the wash package of the car will be changed. Add any options using the key pad. Pressing the key for a currently selected option will deselect the option. The LEDs will illuminate to show which wash package and which options are currently selected. Once the car enters the wash, the LCD display will return to indicating that a new car can now be added.

Deleting a Car

To delete a car press the button twice. If the button is pressed only once, the car will not be deleted, but all options will be deleted and the wash package will be set to the default package. Once a car has entered the wash it can no longer be deleted using the PBS.

Stacking ON

Adding a Car

Up to five cars can be added to the PBS queue. Cars in the queue are represented by the car icons just under the LCD display; the icon's LED will be illuminated for each car that is waiting to enter the wash. The rightmost icon represents the first car in the queue (the next car to enter the wash). The leftmost icon represents the last car in lineup. One of the car icons will be flashing; this is the **'current car on the PBS'**. If any of the key pad buttons are pressed (option, wash package, Clear Program), the action will be applied to this car. The user can change the current car by using the **PRV** and **NEXT** keys.



To add a new car to the queue, press the **SEL** button. A new car will be added to the back of the queue and assigned the default wash package. The new car is automatically set to the current car on the PBS and the user can select a wash package and options for this car.

If there are no cars currently in the queue then a new car can be added by simply selecting a wash package. The new car will be represented by the rightmost car icon which will be flashing.

Deleting a Car

To delete a car first use the **NXT** and **PRV** keys to make this car the current car on the PBS. Press the **'Clear Program'** button twice. If the button is pressed only once, the car will not be deleted, but all options will be deleted and the wash package will be set to the default package. Once a car has entered the wash it can no longer be deleted using the PBS.

Alerts

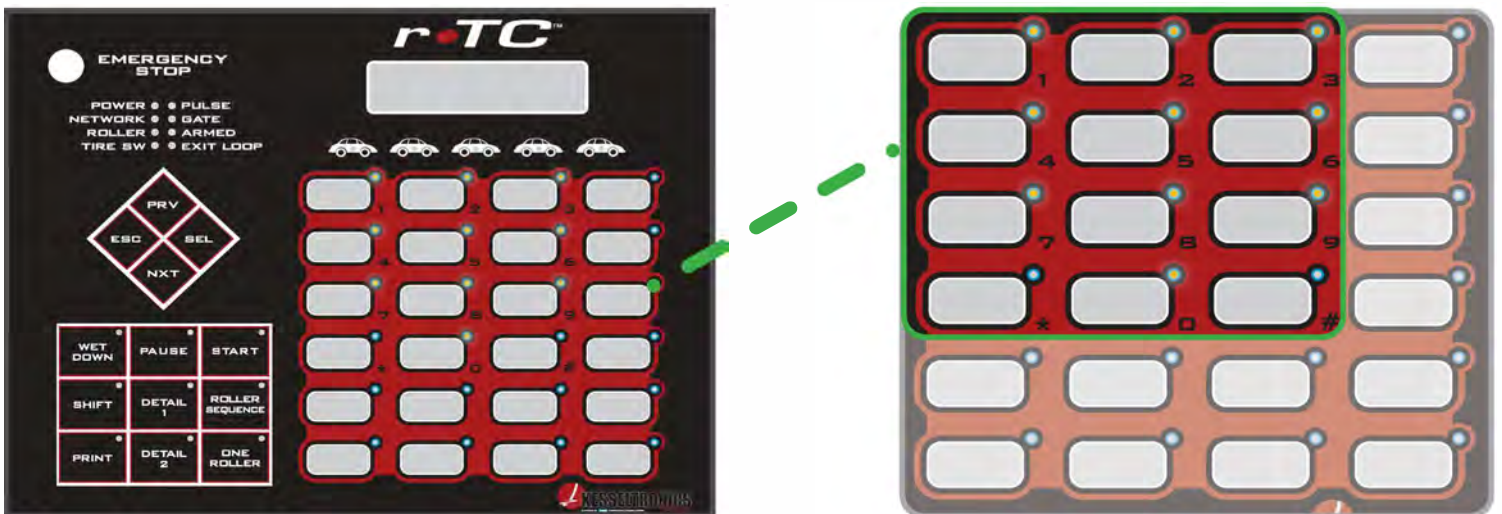
If any alerts are active on the r-TC, they will be displayed on the second line of the PBS's LCD display.

Ready!
Power Failure

Adding a Pre-Paid Wash

If your car wash is using Pre-Paid washes then typically the car will be automatically detected via the r-TC's RFID reader. Alternately, the PBS 4000 can be used to manually enter a pre-paid ID and add the car to the r-TC's queue.

Firstly, a button must be configured on the PBS 4000 that will activate a special mode on the PBS 4000 to allow the user to enter the customer's pre-paid ID. Go to the PBS 4000 Key Pad Assignment web page via the I/O web page. Assign the **'Enter Prepaid Wash'** function to one of the keys. If this key is now pressed, the PBS 4000 goes into a special mode where some of the program keys will be illuminated. These illuminated keys are used to enter the numbers of the pre-paid ID similarly to the keys on a telephone. The numbers of each key are written in small text on the PBS 4000.



At any time press the Clear Program key to exit this special mode and return the PBS to its normal mode of operation.

The user should enter the customer portion of the pre-paid ID (the Car wash portion of the pre-paid is displayed automatically). The customer portion is the last six digits of the full pre-paid ID.

500000 -----

Enter prepaid ID, press CLEAR PROGRAM to cancel

Press the SEL button once the full ID has been entered.

500000 000123

Enter prepaid ID, press CLEAR PROGRAM to cancel

At this point the customer will be added to the r-TC's queue and his pre-paid wash package and options will be automatically added. The customer portion of the pre-paid ID will be displayed in the lower portion of the PBS 4000's display. The PBS 4000 will automatically return to its normal mode of operation.

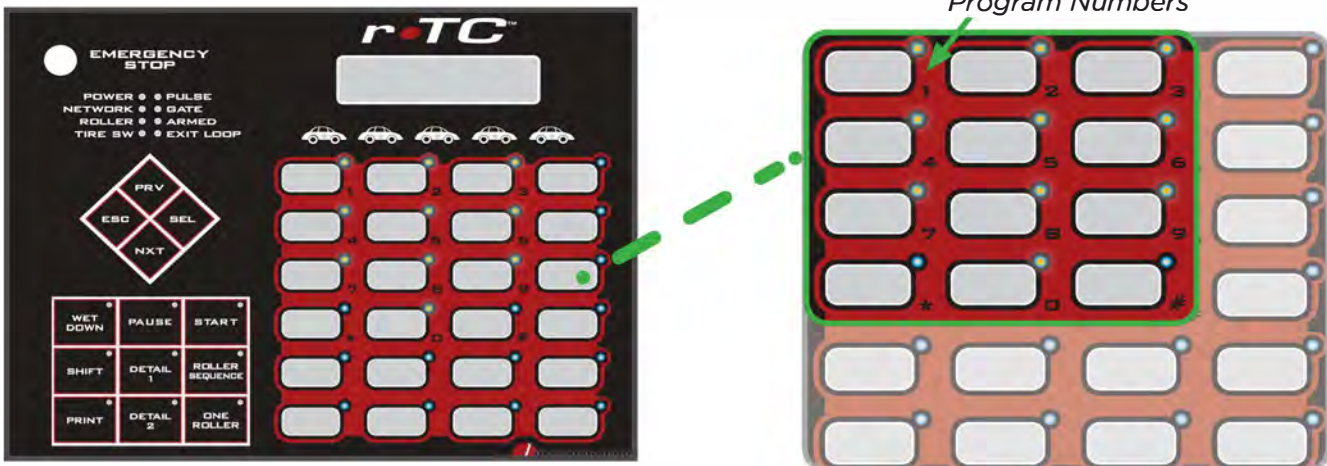
Deluxe Wash
000123

If for whatever reason the car cannot be added to the queue, a brief explanation will be displayed on the PBS 4000 for 10 seconds.

Entering a code

If your car wash is configured to communicate with WASHCODE then customer codes can be entered and validated via the PBS 4000.

Firstly, a button must be configured on the PBS 4000 that will activate a special mode on the PBS 4000 to allow the user to enter the customer's code. Go to the PBS 4000 Key Pad Assignment web page via the I/O web page. Assign the "Enter WASHCODE" function to one of the keys. If this key is now pressed, the PBS 4000 goes into a special mode where some of the program keys will be illuminated. These illuminated keys are used to enter the numbers of the code similarly to the keys on a telephone. The numbers of each key are written in small text on the PBS 4000.



At any time press the Clear Program key to exit this special mode and return the PBS to its normal mode of operation.

The user should enter the customer's code using the special keys.

12345
Enter Code, press SEL to activate or CLEAR PROGRAM to cancel

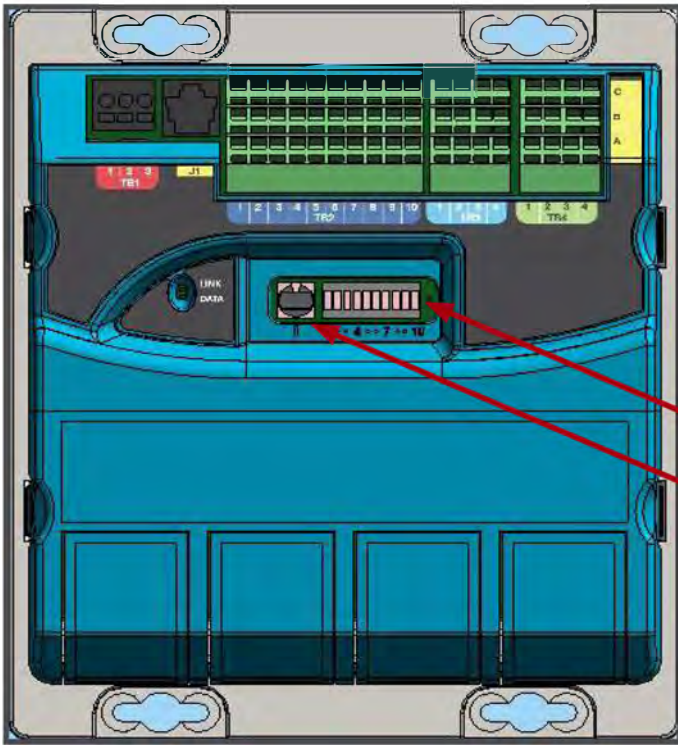
Press the SEL button once the code has been entered.

At this point the customer will be added to the r-TC's queue and his wash package and options will be automatically added. The PBS 4000 will automatically return to its normal mode of operation.

Deluxe Wash

If for whatever reason the car cannot be added to the queue, a brief explanation will be displayed on the PBS 4000.

Setting the Nodes IP Address



LED's

Rotary Switch

Procedure

1. Power on the node with the rotary switch in the **'F'** position.











2. When the furthest **LED** to the right and the **LED 3rd furthest** from the right turn on (this will only take a second or two), turn the switch to the **'E'** position.



3. The LEDs should step one place to the **left**, turn the switch to the **'D'** position. At this point all the **LEDs** should turn on.



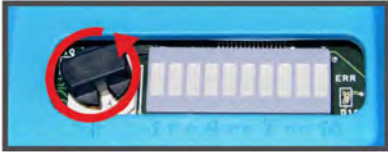
4. You can now choose the node's IP address. For node 1, set the switch to position 1. The LEDs will flash showing the current value of the address.

192.168.1.81	
192.168.1.82	
192.168.1.83	
192.168.1.84	
192.168.1.85	
192.168.1.86	
192.168.1.87	
192.168.1.88	

5. Once the correct address has been selected, leave the switch in this position until the **LEDs stop flashing**.

6. Wait for unit to **reset**, and you are done.

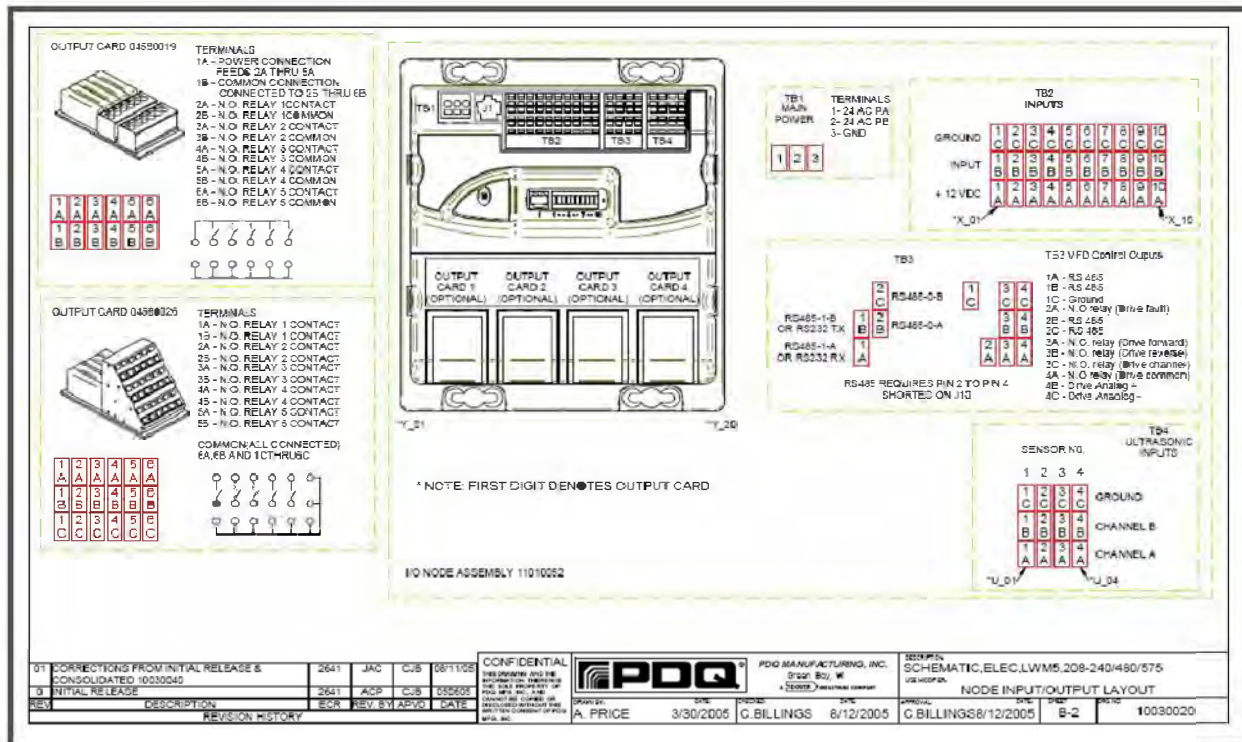
The Nodes Display Switch Functions



- 0General Status
- 1 Error Codes
- 2 Warning
- 3 Digital Inputs
- 4 Digital Outputs 1 - 10
- 5 Digital Outputs 11 - 20
- 6 VFD Speed Bargraph 0-9 and Bit Fields
- 7 Application Specific
- 8 Application Specific
- 9 Application Specific
- A IP Address
- B Ultrasonic 1 Distance Display
- C Ultrasonic 2 Distance Display
- D Ultrasonic 3 Distance Display
- E Ultrasonic 4 Distance Display
- FVoltage Monitor Status

The Nodes Electrical Schematic

WASH ACT. NODE I/O LISTING		BRIDGE NODE I/O LISTING		PUMP NODE I/O LISTING		BAY NODE I/O LISTING		POWER NODE I/O LISTING	
POINT	DESCRIPTION	POINT	DESCRIPTION	POINT	DESCRIPTION	POINT	DESCRIPTION	POINT	DESCRIPTION
X101	Vehicle at Entry	X201	Arch Impact	X301	HP Tank High	X401	Entrance Door Eye	X501	System Stop
X102	Wash 1 Enable	X202	Arch Index 0	X302	HP Tank Low	X402	Exit Inside Loop	X502	Spot Free Level
X103	Wash 2 Enable	X203	Arch Index 1	X303	Solution Tank High	X403	Exit Outside Loop	X503	Recirc. Status
X104	Wash 3 Enable	X204	Arch Index 2	X304	Solution Tank Low	X404	Exit Outside Eye	X504	Mount. Key Switch
X105	Wash 4 Enable	X205	Trolley Encoder	X305	HP Reclaim Inject Pressure	X405	Future use	X505	Soap Heat Aux.
X106		X206	Trolley Limit	X306		X406	Future use	X506	Wash Closed
X107		X207	Trolley Mid Driver	X307		X407	Future use	X507	
X108		X208	Bridge Encoder	X308		X408	Outside Temp.	X508	
X109		X209	Bridge Limit	X309		X409	Bay Temp.	X509	
X110	Entry Temperature	X210	Bridge Mid-Ent.	X310		X410		X510	Soap Water Temp.
U101		U201	ENT Floor Left	U301		U401	LC L US Sensor	U501	
U102		U202	ENT Floor Right	U302		U402	UC R US Sensor	U502	
U103		U203	EXIT Floor Left	U303		U403	Width L US Sensor	U503	
U104		U204	EXIT Floor Right	U304		U404	Width R US Sensor	U504	
485-1		2 485-1		3 485-1		4 485-1		5 485-1	Diagnostic Port
485-2		2 485-2		3 485-2		4 485-2		5 485-2	
V101		V201	B/A Drive Fault	V301		V401	Entrance UV	V501	Sol. Motor
V102		V202	B/A Forward	V302	HP Detectivity	V402	Entrance UV	V502	Sr Motor
V103		V203	B/A Reverse	V303	HP Undercarriage	V403	Wash Open	V503	HP Motor
V104		V204	B/A Channel	V304	HP Water Saver	V404	Wash Closed	V504	Soap Water Heat
V105		V205	Speed Reference	V305	HP Hot Water Inject	V405	Not used	V505	
Y101	Wash Busy	Y201	Bridge Connector	Y301	HP Arch	V406	Future use	Y506	Gunin Gun Hyd
Y102	Wash Open	Y202	Trolley Connector	Y302	HP Undercarriage	Y407	LC US Heat	Y507	Wheel Cleaner
Y103	Wash Closed	Y203	Arch Connector	Y303	LP Soap 1	Y408	Wash US Heat	Y508	
Y104		Y204	Ultrasonic Heat	Y304	LP Soap 2	Y409	Future use	Y509	
Y105		Y205		Y305	Solution Pump Feed	Y410	Future use	Y510	
Y106		Y206		Y306	LP Soap 1	Y411	Entrance Up	Y511	Dryer 1
Y107		Y207		Y307	LP Soap 2	Y412	Entrance Down	Y512	Dryer 2
Y108		Y208		Y308	Solution Tank Fill	Y413	Exit Up	Y513	Dryer 3
Y109		Y209		Y309	Main Tank Fill	Y414	Exit Down	Y514	Dryer 4
Y110		Y210		Y310	HP Hot Water Inject	Y415		Y515	Countdown Timer
Y111		Y211		Y311	HP Reclaim Agent	Y416		Y516	Rail Heat
Y112		Y212		Y312	6th Chemical Service	Y417		Y517	3X Water Bypass
Y113		Y213		Y313	HP Reclaim Inject	Y418		Y518	Pump Heat
Y114		Y214		Y314	Rust Inhibitor	Y419		Y519	Weep
Y115		Y215		Y315	3X Foam Chemical	Y420		Y520	3X Weep
Y116		Y216		Y316	3X Foam Air				
Y117		Y217		Y317	Future use				
Y118		Y218							
Y119		Y219							
Y120		Y220							



Appendix A

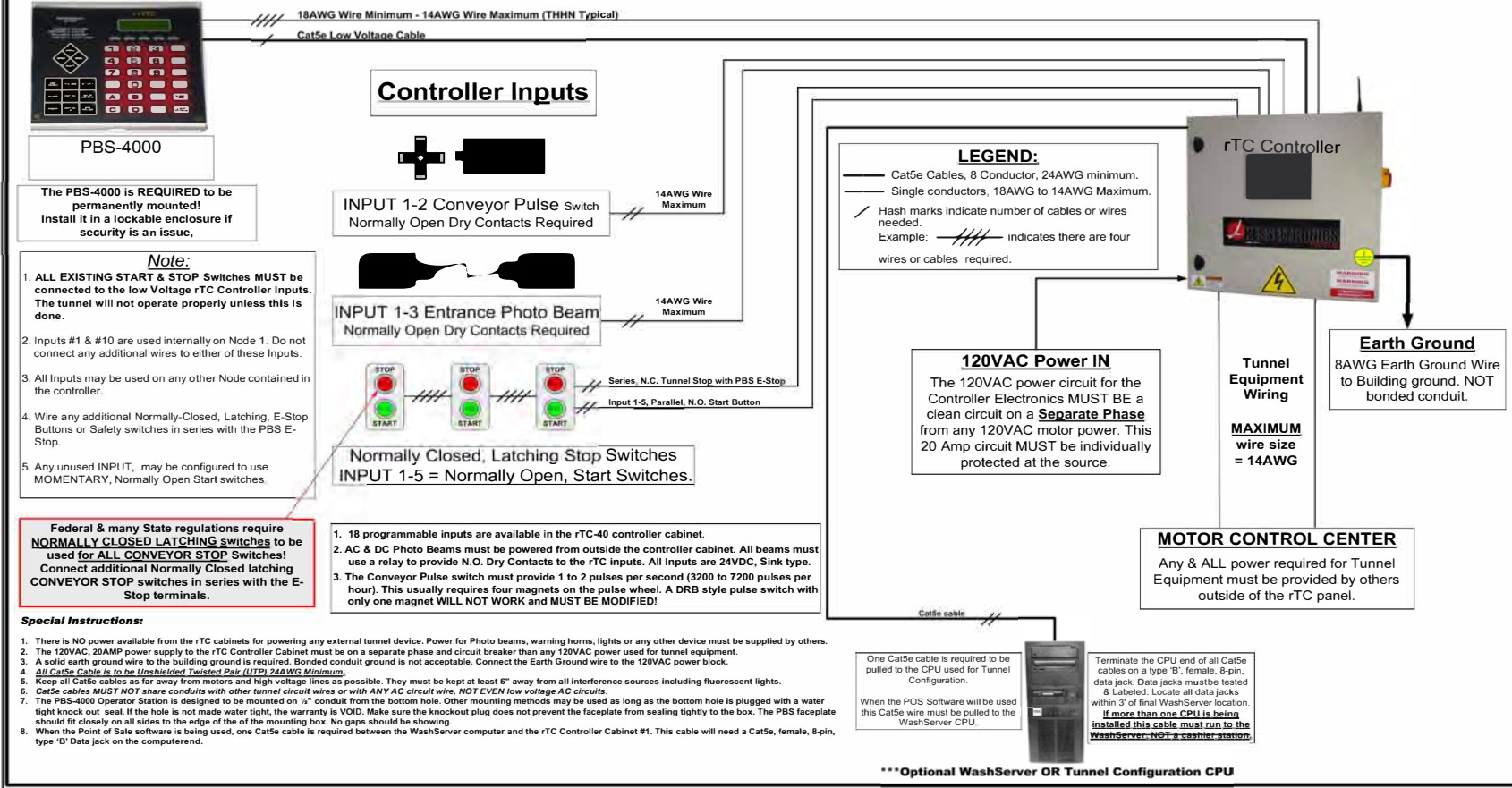
r-TC IP Address Table

TOUCH SCREEN	192.168.1.80
I/O NODES	192.168.1.81 (81 - 90 available)
MAIN ROUTER	192.168.1.91 (Connected to WAN)
PBS 4000	192.168.1.71 (71 - 74 available)
KTR-910	192.168.1.182 (182 - 185 available)
KTR-EX1	192.168.1.50
KTR-VISION	192.168.1.10 (10 - 19 available)

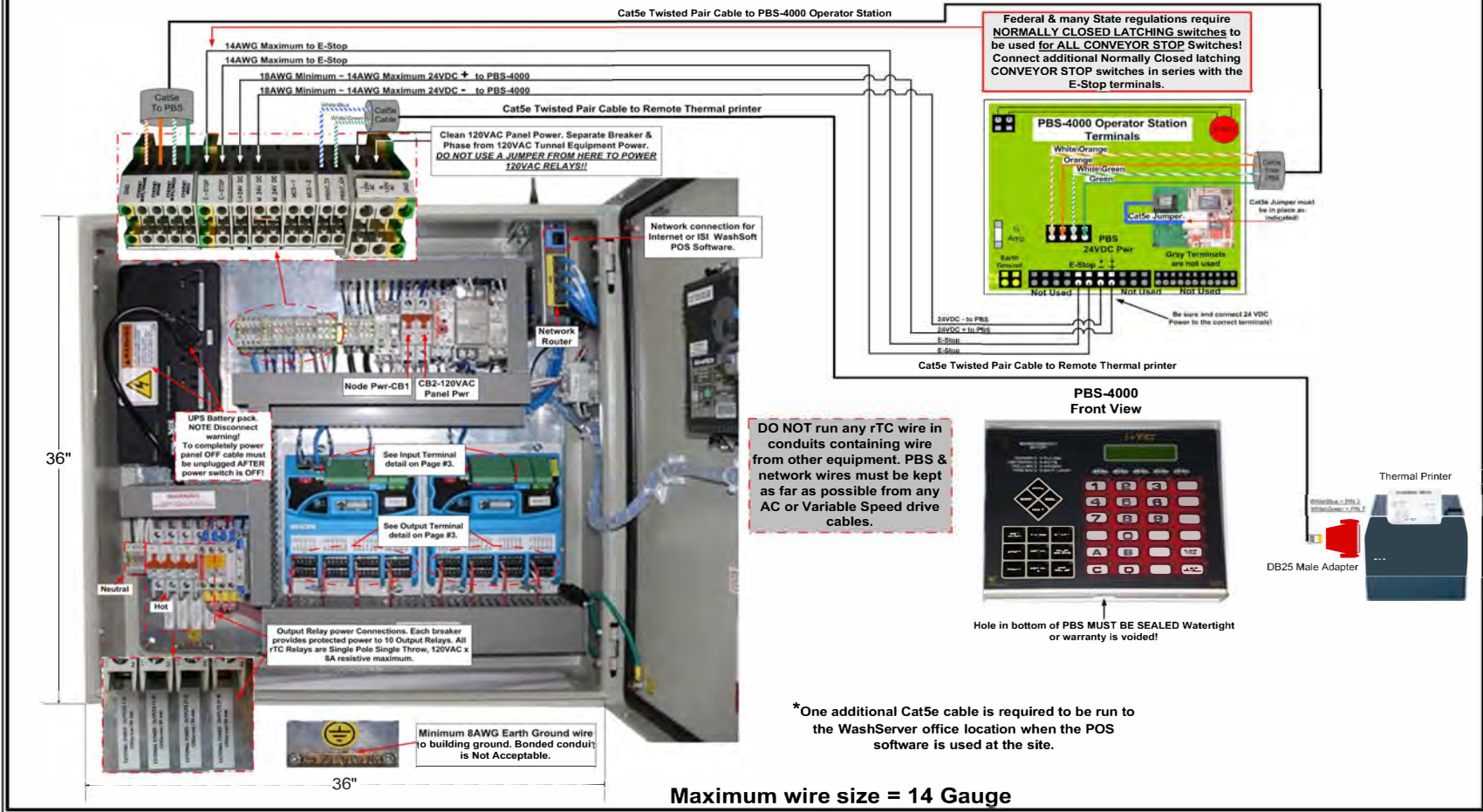
r-TC Enclosure Dimensions

r-TC 2000	16(W) x 24(H) x 10(D) inches
r-TC 4000	24(W) x 24(H) x 10(D) inches
r-TC 6000	24(W) x 32(H) x 10(D) inches
r-TC 8000	24(W) x 48(H) x 10(D) inches

r-TC Controller Hardware Layout Page #1

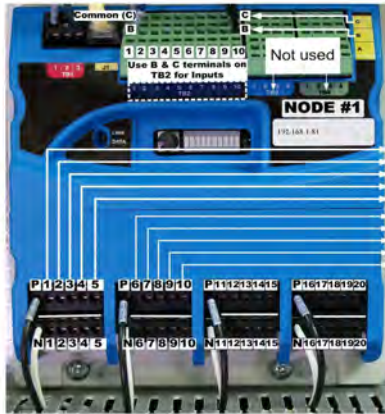


r-TC-40 Controller Cabinet Detail Page# 2



r-TC Wiring Examples Page #3

Output Relay Wiring Examples



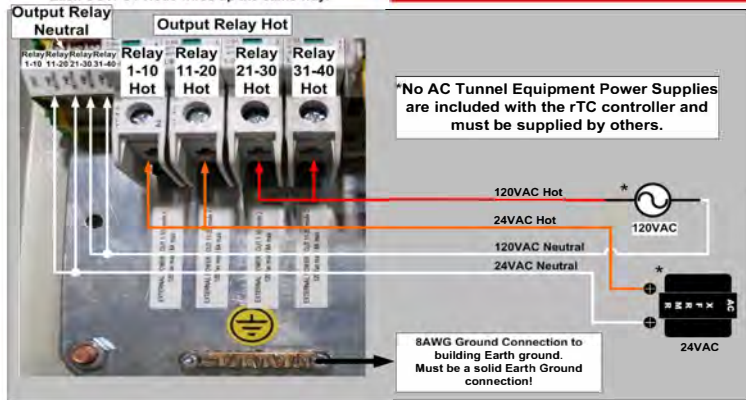
MAXIMUM wire size = 14 Gauge

- R1-1 Conveyor 120VAC from Pwr 1A
- R1-2 Triple Foam light 120VAC from 1A Pwr terminal
- R1-3 All 10 relays in a group will have same power output.
- R1-4
- R1-5
- R1-6 Warning Bell or Horn 24VAC from 1B Pwr terminal
- R1-7 Triple Foam Solenoid 24VAC from 1B Pwr terminal
- R1-8 Roller Up Solenoid 24VAC from 1B Pwr terminal
- R1-9 All 10 relays in a group will have same power output.
- R1-10

All rTC Output Relays are Single-Pole, Single-Throw, Normally-Closed Relays. They can be changed to Normally Open through the Configuration Menu's. Each Circuit Breaker provides output power to Ten relays.

There is no A.C. or D.C. power available in the rTC controller panel to power other devices.

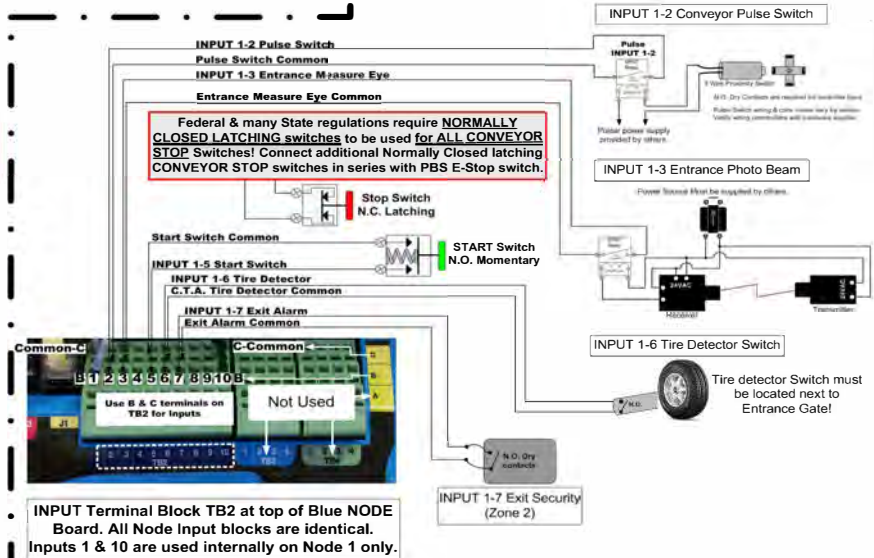
Each OUTPUT Node wires up the same way.



INPUT Sensor Wiring Examples

MAXIMUM wire size = 14AWG

All rTC INPUT circuits are low Voltage DC. Power comes from rTC panel only. No other external power supply voltage can be applied to rTC INPUT terminals!

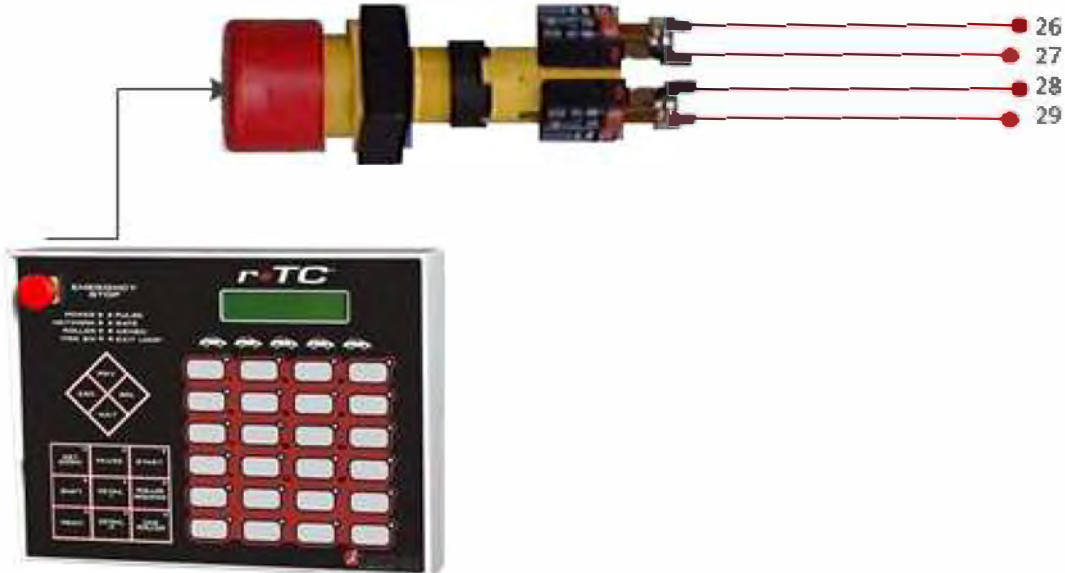


Appendix E - E-Stop Wiring Diagrams

North American Wiring

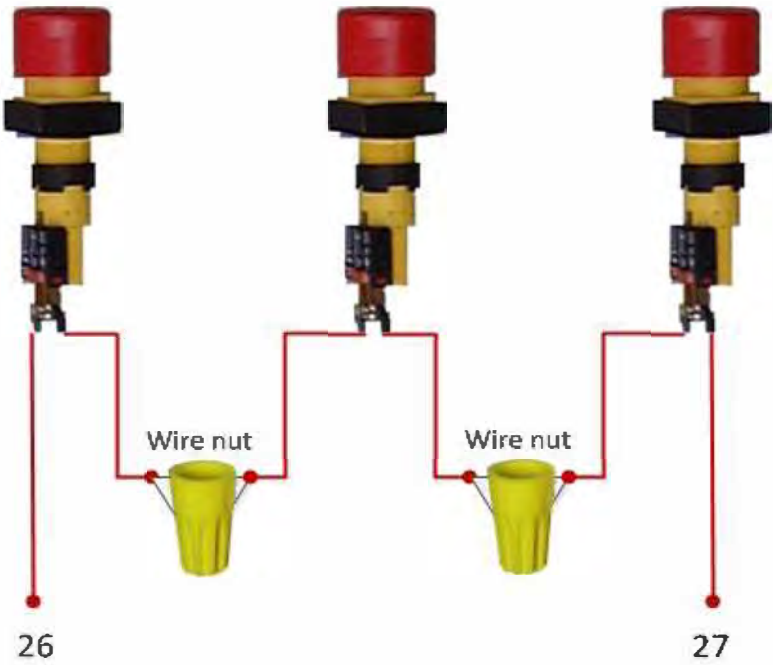


Europe Wiring

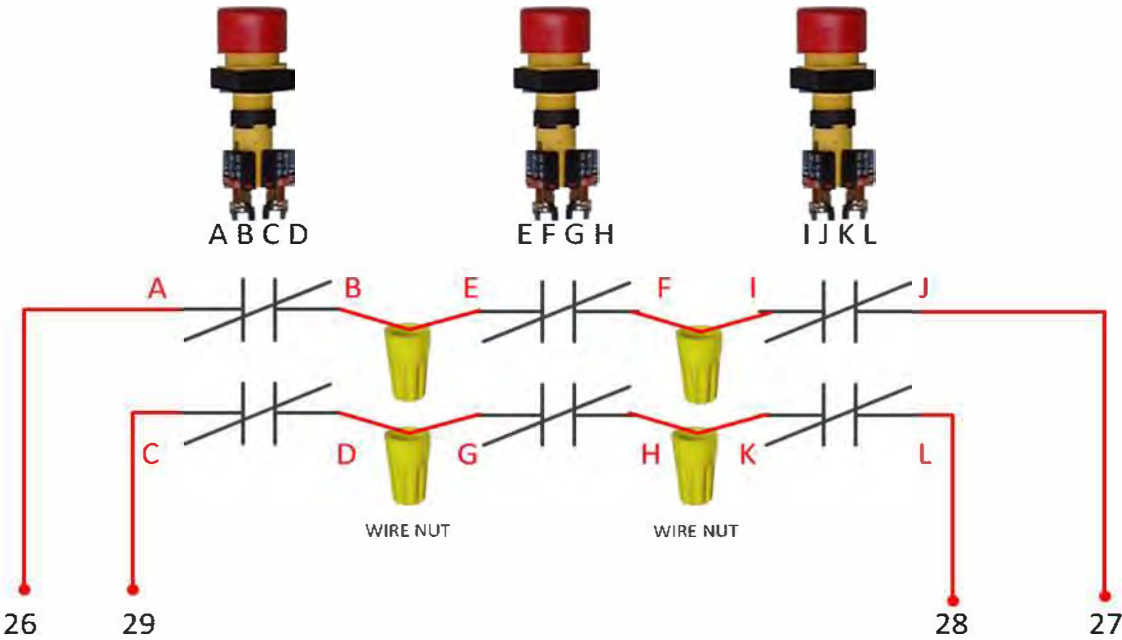


Appendix E - E-Stop Wiring Diagrams

North American Wiring In Series



Europe Wiring In Series



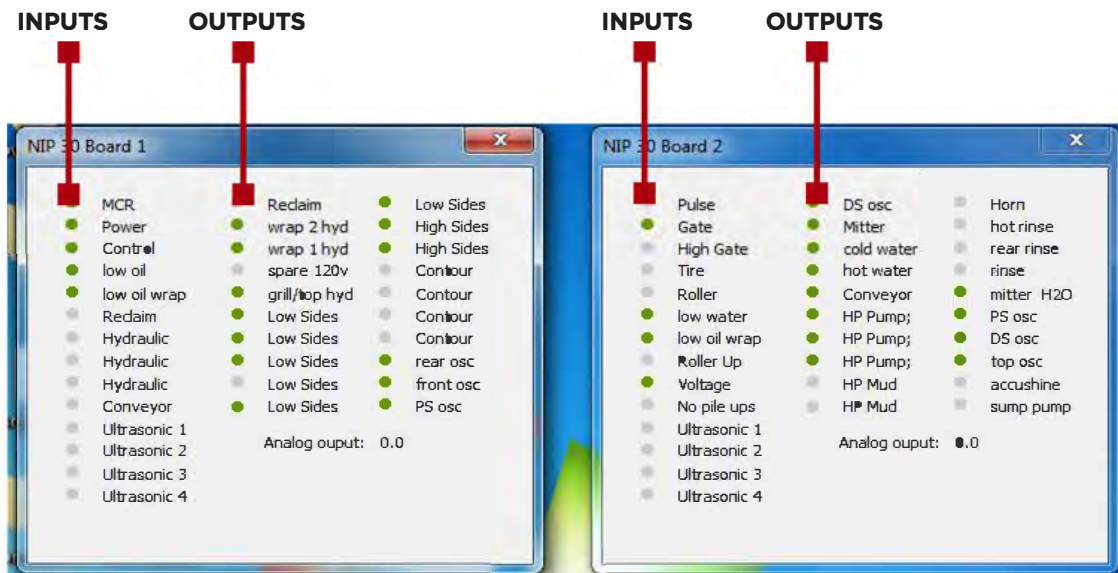
Appendix F - Black Box Viewer Tool

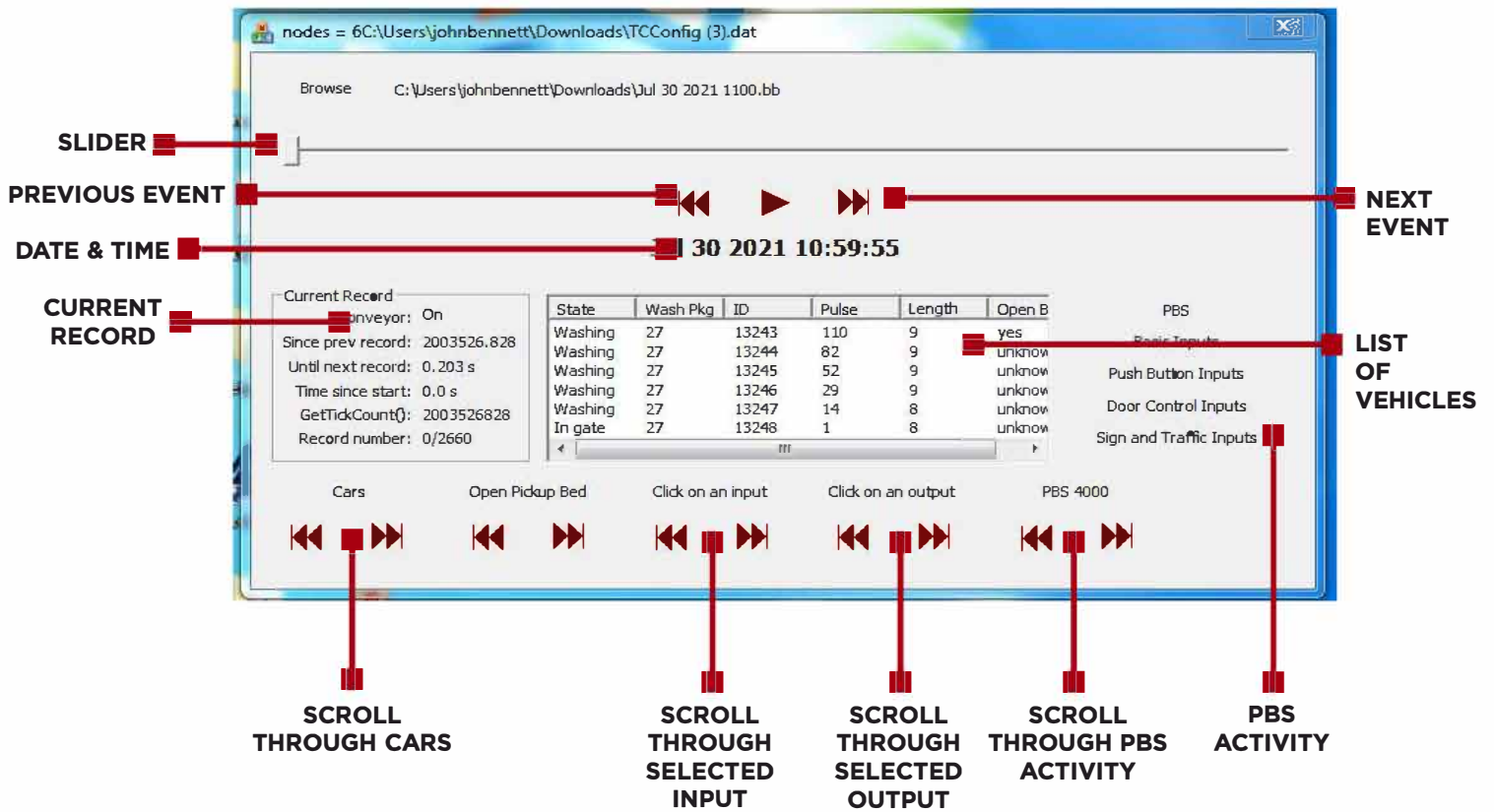
The r-TC is constantly recording the activity in the carwash. The BlackBox Viewer tool can be used to replay events that occurred in the car wash. This is a powerful diagnostic and troubleshooting tool.

The tool itself can be downloaded from the Tools -> Downloads page in the r-TC web interface. From this same page you will also need to download the Configuration file and a Black Box file from the time you would like to examine (the files are divided into hourly intervals).

The tool is a simple executable and can be launched by double clicking on the file. You will be prompted for the Configuration file and the Black box file.

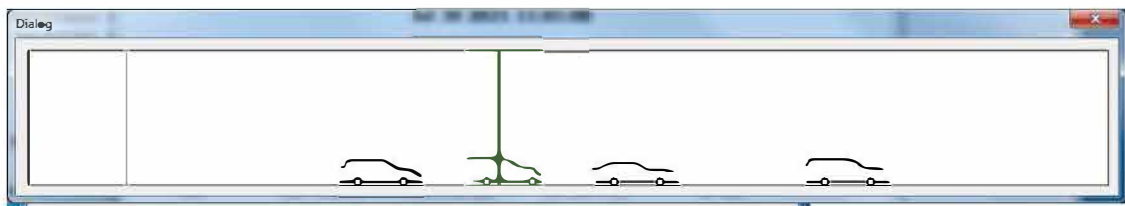
You will now be able to see all the activity that took place in the car wash during that hour long period. This includes each car that passed through the wash, every input and output on the I/O nodes and every button press on the PBS 5000. You can let the tool play to see a live representation of the events. Or you can pause and jump around in time to see snapshots of activity.



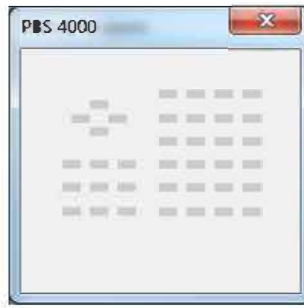


A graphical view of the cars in the wash will be displayed. All dimensions are scaled down but in correct proportion to the length of the conveyor and to each other. If the Vehicle Profiler is being used then the car will be displayed as it was read by the ultrasonic sensor. If the Vehicle Profiler is not enabled then the car will be represented by a rectangle whose length is based on the length measured by the gate eye.

If you click on an output on one of the I/O Node windows, it will be displayed as a vertical line in the tunnel. If the associated equipment is off the line will be black, in the equipment is on the line will be green.



To show the activity on the PBS 5000, click on the “PBS” button on the right hand side of the main window.



To show more detailed information about a vehicle, double click on the vehicle in the list of vehicles in the main window.

nodes = 6C:\Users\johnbennett\Downloads\TCCconfig (3).dat

Browse C:\Users\johnbennett\Downloads\Jul 30 2021 1100.bb

Jul 30 2021 10:59:55

Current Record	State	Wash Pkg	ID	Pulse	Length	Open B
Conveyor: On	Washing	27	13243	110	9	yes
Since prev record: 2003526.828	Washing	27	13244	82	9	unknow
Until next record: 0.203 s	Washing	27	13245	52	9	unknow
Time since start: 0.0 s	Washing	27	13246	29	9	unknow
GetTickCount(): 2003526828	Washing	27	13247	14	8	unknow
Record number: 0/2660	In gate	27	13248	1	8	unknow

PBS
Basic Inputs
Push Button Inputs
Door Control Inputs
Sign and Traffic Inputs

Cars Open Pickup Bed Click on an input Low Sides #3 DS PBS 4000

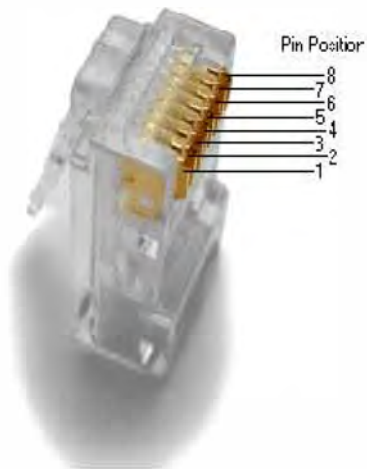
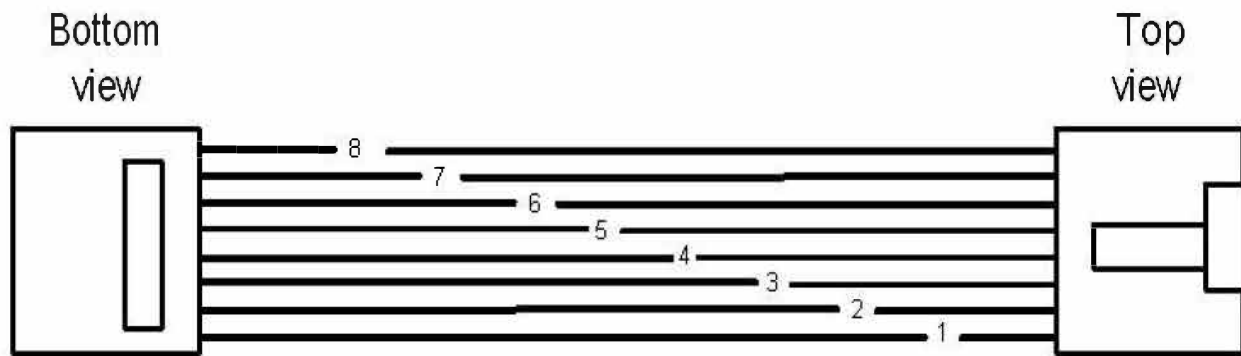
Vehicle ID 13245

Entrance Door Eye:
Bay Eye:
Exit Door Eye:
Exit Door Eye Detected:

Front Tire: 2
Rear Tire: 7
High Gate On: 4
High Gate Off: 8
Mirror:
No Pickup Retract: False
Trailer Hitch Retract: False

Dialog

Appendix G - Standard Network Cat5 Cable

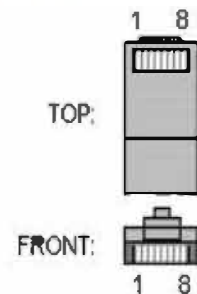


TIA/EIA-568-B T568B Wiring

Pin	Pair	Wire	Color
1	2	1	white/orange
2	2	2	orange
3	3	1	white/green
4	1	2	blue
5	1	1	white/blue
6	3	2	green
7	4	1	white/brown
8	4	2	brown



Pin 1



Appendix H - How to perform a simple overload/battery test



“OVERLOAD/CHECK BATTERY” LED: This red LED lights continuously after a self-test to indicate the capacity of the battery-supported outlets has been exceeded. To clear the overload, unplug some of your equipment from the battery-supported outlets; then use the ON/OFF/TEST button to run a Self-Test. If the UPS continues to detect an overload, remove more equipment and repeat the self test until successful.



Any overload that is not corrected by the user immediately following a self-test may cause the UPS to shut down and cease supplying output power in the event of a blackout or brownout.

The LED flashes to indicate the battery needs to be recharged or replaced. If the LED flashes (and a continuous alarm sounds) during a prolonged blackout or brownout, the UPS’s batteries are nearly out of power; you should save files and shut down your equipment immediately.

If the LED flashes following a UPS self-test (after the UPS is turned ON), it may indicate that the battery needs to be replaced. Allow the UPS to recharge continuously for 12 hours; then use the ON/OFF/TEST button to run a Self Test. If the LED continues to flash, contact Tripp Lite for service.

Should your UPS require battery replacement, visit Tripp Lite on the web at www.tripplite.com/support/battery/index.cfm to locate the specific replacement battery for your UPS, or your distributor.



LAGUNA
INDUSTRIES