Installation Guide
Programming Manual

Tommy
premium advantage

Car Wash
Tunnel Controller
GENERAL WARNING

READ ENTIRE MANUAL CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE, OR SERVICE THIS EQUIPMENT. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION AND ADDITIONAL INSTRUCTIONS INCLUDED WITH THIS EQUIPMENT AND THE EQUIPMENT THIS UNIT CONTROLS. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE!

WARNING

Mounting, commissioning, maintenance, modification and changing by qualified personnel only. Follow safety instructions Disconnect power before proceeding with any work on this equipment!

During operation of the electrical switchgear:
• Hazardous voltages are present on specific parts and can cause electrical shock and burns.
• Hot and ionized arc gas can escape, especially during a short circuit.
• Protection covers and arc chambers must not be removed.
• Do not operate contactors by pushing the position indicator while device is under voltage.
• Non-observance with this warning can result in death, severe personal injury, or substantial property damage.

NOTE:
Raintight or wet location hubs that comply with UL 514B, Standard for Fittings for Cable and Conduit, or hubs having the same environmental rating as the enclosure shall be used.

UL 508A
NOTE: This manual and installation guide will refer to and display all available modules of the Tommy Premium Advantage Car Wash Tunnel Control System. Actual installations may include only those modules purchased.

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1.1 Description

The Tommy Premium Advantage car wash controller is designed to control the entire operation of the car wash tunnel. The controller will operate a conveyORIZED equipment package, operating traditional over/under roller type conveyors, surface conveyors, or belt type conveyors, utilizing a steady pulse created in relation to the conveyor speed. As the vehicle moves down the car wash tunnel, it will turn on and off solenoid valves, chemical application pumps, lights, electric motor starters, and other car wash equipment through internal relays. Dryer and pump motors can be controlled and monitored with variable speed drives, which are linked directly to the Tommy Premium Advantage for optimal monitoring. In addition to controlling output applications, signals and systems critical to proper operation are continually monitored. All these signals can be viewed on site through the touch pad screen, or on line anywhere through an internet connection. A special feature of the TPA is its ability to notify the operator of any control problems within the car wash through visual banners, email, or text messages. The controller is modular in design with plug & play installation saving installation time and money.

These features make the Tommy Premium Advantage a true automated controller for the car wash operation.

1.2 Features

1. Modular, plug & play construction saves thousands of dollars in installation time and wiring costs.
2. Full output control for each function. Entire vehicle as well as front, rear, and tire application.
3. Each function can be set up as “programmable”, “de-programmable”, or “sequential”.
4. With 12 different wash packages, each with 16 variables, any combination of wash services can be programmed for customers purchasing services.
5. Each function can “look back” to a point before it in the car wash tunnel and remain on for efficiency.
6. Each function can be set to flash.
7. Wet down features for cloth type washes.
8. Starting sequencers reduce starting surges and overloads.
9. Multiple gate and pulse sensor inputs provide redundancy and increased reliability.
10. Equipment Safety Sensor inputs monitor tank levels, can be used as progress switches, and on-off control.
11. Manual or automatic vehicle loading.
12. Six remote modules, Entrance and Exit modules, starter and VSD panels, and a lighting panel available as options.
13. Remote monitoring over the Internet with a broadband connection.
14. Alarms to alert the operator of potential problems.
15. Text messages and email alerts can be sent alerting service personnel of potential problems.
16. Optional printer for wash counts reporting.
1.5 Overview of Modular Components

The Tommy Premium Advantage Car Wash Tunnel Controller System is designed as a modular system for cost savings, ease of installation and setup, and reduction of initial wiring costs. All components are “plug & play”, with simple on-screen and remote setup. Simply choose the components necessary to complete the equipment requirements.
1.6 **TPA Base**

![Diagram of TPA Base]

- Panel Power Circuit
- Control Power Circuits
- 24v DC Input Device Signals
- POS Commands
- Internet Connection

**TPA Control Panel**

- Ethernet Network Connection to each Module Installed
- Controlled Outputs from Output Module

1.7 **Remote Modules Clean, Brite, Shine and Dry**

Each remote module is controlled by the base, connected with the Ethernet network cable.

![Diagram of Remote Module]

- Control Power Circuit
- Ethernet Network Connection from Base
- 24v DC Input Device Signals (*optional*)

**Clean Remote Module**

- Controlled Outputs from the Module
1.8 **Motor Starter Panels SP1 and SP2**

The Tommy Premium Advantage starter panels house across-the-line self protected motor starters. Each panel is supplied with primary power to a main lug connection. Control to the starters and input terminals are via the Ethernet network. Manual Hand-Off-Auto switches are optional.

1.9 **Variable Speed Drive Panels VSD1, VSD2, VDS3**

The Tommy Premium Advantage VSD panels house variable speed drives for either conveyor speed control, multi speed dryer motor control, or variable speed pump control. Each panel is supplied with primary power to a main lug connection. Control to the VSD’s and input terminals are via the Ethernet network.
1.9.5 Lighting Control Panel

The Tommy Premium Advantage Lighting Panel houses breakers and lighting contactors for up to eight different controlled circuits. Control for the contactors are via the Ethernet network. Manual Hand-Off-Auto switches are included.
2.1 Input Definitions  These input terminals are installed in the TPA Base.

**Terminal# 001 thru 005 Wash Stop.** A constant maintained signal must be applied to these terminals at all times for the car wash equipment to operate. This is accomplished with a normally closed, maintained contact push button operator. At least 3 stop buttons mounted at the beginning, middle, and end of the tunnel are recommended. Consult authorities having jurisdiction for other requirements. Install a jumper wire to 24v DC (+) on any un-used terminals. See the wiring schematic for more information.

**Terminal# 006 thru 009 Wash Start.** A momentary signal applied to any of these terminals will start the car wash operating sequence.

**Terminal# 010 and 011 Pulse 1 and Pulse 2.** Provides a pulsed clock input relative to conveyor speed. Two inputs can be wired to provide a back up in case of failure. Selection is made in the Pulse Sensor screen.

**Terminal# 012 and 013 Gate Sensor 1 and 2.** Accepts an input from a detection device, often a photo eye beam, that is ON for the entire length of the vehicle. Two inputs can be wired and selected to operate as back up or as a redundant input signal.

**Terminal# 014 Chain Tension Sensor.** Accepts a signal from the chain tension sensor. This sensor is monitored for alarm purposes only.

**Terminal# 015 Phase Monitor.** Monitors the signal from an optional 3 phase monitoring device. If such a device is installed, a signal will halt all automatic car wash operation and the TPA will activate an alarm.

**Terminal# 016 Load.** This is a manual push button input that “loads” the selected wash package or ala carte combination into the Wash Line. The line can hold up to 10 vehicles, the number of which is indicated on the Status page as “Ready To Wash”. Loaded vehicles can also be viewed in the Ready To Wash page.

**Terminal# 017 Roller Raise.** This is a manual push button input that will raise the roller on an over/under or surface type conveyor. The Vehicle Position sensor and Roller Position sensor may affect the roller raise sequence.

**Terminal# 018 Axle Prox Sensor.** Accepts an input that counts the wheels, or axles, as the vehicle drives onto the car wash conveyor. This sensor should be placed just past the trap door on an over/under conveyor, or at the point the vehicle is sufficiently loaded unto a belt conveyor. This input is used for an Auto Load setup. Answering Yes to the Auto Roller question in the Roller Raise Setup page will activate this input to accept signals.

**Terminal# 019 Vehicle Position Sensor.** When Auto Loading is selected and setup, a Vehicle Position Sensor may be desired to verify that a vehicle is actually in place on the conveyor, ready to wash. This can be accomplished with in-ground loops, photo eyes, ultra sonic sensors, or other sensing means. See the wiring schematic for more information.

**Terminal# 020 Roller Position Sensor.** When activated, the roller raise signal will be held until a signal is received from the roller position sensor. Answer Yes to the question Roller Sensor to be Used in the Roller Raise setup page.
2.1 Input Definitions cont.

Terminal# 021 Tire Sensor. This input provides placement of the front and rear tire of a vehicle. Placement of the sensing device must be while a vehicle is in the Gate Sensor. The Tire Sensor signal can be extended to reduce “bounce”.

Terminal# 022 Anti Collision Sensor. A device that senses a vehicle presence and provides an input to this terminal will pause the conveyor output in the case of a vehicle not exiting properly from the car wash tunnel. The Banner MGAGE sensor is an excellent choice for this application.

Terminal# 023 Oil Level Sensor. The Oil Level Sensor monitors the oil fluid level on one or all hydraulic pumps. This input will prohibit the conveyor from running if not satisfied. Wire multiple sensors in series. An alarm can be enabled to notify the operator of a low oil fault.

Terminal# 024 Air Pressure Sensor. This input monitors the air pressure manifold for the car wash and will prohibit the conveyor from running if not satisfied. An alarm can be enabled to notify the operator of a low air fault.

Terminal# 025 to 036 Push Buttons 1 thru 12. These are manual “pushbutton” type inputs and will setup a vehicle wash in the proper fashion, whether as wash packages or ala carte items, or a combination of either. These input signals only affect the first vehicle in the wash line. They will also over-ride previously programmed packages. See the Wash Packages Setup page for proper instructions. PB7 and PB8 pressed simultaneously for several seconds will activate the wet down feature.

Terminal# 037 Bay Cleaner Pump ON/OFF Switch Input. An optional Bay Cleaning Pump may be controlled with this switch input. Note that for safety reasons, the Bay Cleaning Pump output will not be activated while the conveyor is running, and conversely the conveyor cannot be started if the Bay Cleaning Pump output is on.

Terminal# 038 to 047 Equipment Safety Sensor 1 thru 12. These multi feature inputs can be used to affect a function output in several ways. They most often are used as liquid level inputs to prohibit pumps from coming on if levels are too low. They can also be used as progress switches, and ON / OFF switches for manually controlled outputs. See the Equipment Safety Sensor Setup page for more information.

Terminal# 048 to 059 POS Inputs 1 thru 12. These input terminals will accept signals from Auto Cashiers, POS systems, or manual pushbuttons to select programmed wash packages and ala carte items. Sending a “Load” signal after a package selection will place the selected items into the wash line.
2.3 Output Definitions - Special Output Designations.

**Terminal# 301 Conveyor.** The conveyor output can be used to operate the conveyor hydraulic pump or drive motor. It is affected by the Wash Stop circuit, Oil and Air inputs and the Start input. Automatic shut down can be setup. The Warning Horn and Delay Start parameters are entered in the Conveyor Setup page. This output is turned off during Anti Collision activation, and restarted automatically.

**Terminal# 302 Warning Horn.** This output will be active for the desired number of seconds before the conveyor output becomes active. Consult local and applicable safety codes for information regarding the length of time required for the horn to sound and delay before the conveyor output turns on.

**Terminal# 303 Roller Raise.** This output will be active for the desired number of pulses when a vehicle is entered into the Ready To Wash line. See the Roller Raise Setup page for more information.

**Terminal# 304 to 311 Wash Package Lights.** These outputs will operate Wash Package signs or pilot light indicators depending on which wash code they are assigned to. The light will indicate the wash package programmed to the first vehicle in the Ready To Wash line.

**Terminal# 312 Entrance Triggered Pulsed Output.** This output can be used to operate a variety of devices, but primarily for a voice command unit often installed with auto loading applications. It is activated with the Axle Prox sensor, and is pulsed on for one second.

**Terminal# 313 PULL FWD Light.** This output is used in auto loading applications to give a customer an indication of how far to enter the wash before stopping. It is activated when a vehicle is entered into the wash line, and turns off with the Axle Prox sensor.

**Terminal# 314 STOP NEUTRAL Light.** This output is used in auto loading applications to give a customer an indication when to place their car in neutral, take their foot off the brake, etc. It is activated with the Axle Prox sensor and resets when the roller raise output turns off, with a delay possible.

**Terminal# 316 Bay Cleaning Pump Control.** This output is used to operate the Bay Cleaning Pump starter. The output will only operate when the conveyor is not running for safety reasons. A ON-OFF switch is wired to input terminal 037.
### 2.4 Output Definitions

Terminal# 317 to 364  Functions 1 thru 48. These Functions can be set to effect output relays R317 thru R332 as programmed in the function setup screen.

<table>
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<th>Function #</th>
<th>Relay</th>
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2.7 Output Definitions  When Remote Module CLEAN is installed.

Terminal# 365 to 372 Functions 49 thru 56. These Functions can be set to effect Remote output relays R365 thru R372 as programmed in the function setup screen.

Function #49 Relay 365 Terminal 365 _____________
Function #50 Relay 366 Terminal 366 _____________
Function #51 Relay 367 Terminal 367 _____________
Function #52 Relay 368 Terminal 368 _____________
Function #53 Relay 369 Terminal 369 _____________
Function #54 Relay 370 Terminal 370 _____________
Function #55 Relay 371 Terminal 371 _____________
Function #56 Relay 372 Terminal 372 _____________

2.8 Output Definitions  When Remote Module BRITE is installed.

Terminal# 373 to 380 Functions 57 thru 64. These Functions can be set to effect Remote output relays R365 thru R372 as programmed in the function setup screen.

Function #57 Relay 373 Terminal 373 _____________
Function #58 Relay 374 Terminal 374 _____________
Function #59 Relay 375 Terminal 375 _____________
Function #60 Relay 376 Terminal 376 _____________
Function #61 Relay 377 Terminal 377 _____________
Function #62 Relay 378 Terminal 378 _____________
Function #63 Relay 379 Terminal 379 _____________
Function #64 Relay 380 Terminal 380 _____________

2.9 Output Definitions  When Remote Module SHINE is installed.

Terminal# 381 to 388 Functions 65 thru 72. These Functions can be set to effect Remote output relays R381 thru R388 as programmed in the function setup screen.

Function #65 Relay 381 Terminal 381 _____________
Function #66 Relay 382 Terminal 382 _____________
Function #67 Relay 383 Terminal 383 _____________
Function #68 Relay 384 Terminal 384 _____________
Function #69 Relay 385 Terminal 385 _____________
Function #70 Relay 386 Terminal 386 _____________
Function #71 Relay 387 Terminal 387 _____________
Function #72 Relay 388 Terminal 388 _____________

2.10 Output Definitions  When Remote Module DRY is installed.

Terminal# 389 to 396 Functions 73 thru 80. These Functions can be set to effect Remote output relays R365 thru R372 as programmed in the function setup screen.

Function #73 Relay 389 Terminal 389 _____________
Function #74 Relay 390 Terminal 390 _____________
Function #75 Relay 391 Terminal 391 _____________
Function #76 Relay 392 Terminal 392 _____________
Function #77 Relay 393 Terminal 393 _____________
Function #78 Relay 394 Terminal 394 _____________
Function #79 Relay 395 Terminal 395 _____________
Function #80 Relay 396 Terminal 396 _____________

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PO Box 4054  Akron, OH  44321  www.washcommand.com
2.15 Output Definitions  
When Motor Starter Panel SP1 is installed.

Terminal# 421 to 428  Functions 105 thru 112. These Functions can be set to effect Remote output relays R365 thru R372 as programmed in the function setup screen.

<table>
<thead>
<tr>
<th>Function #105 Relay 421</th>
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<tbody>
<tr>
<td>Function #106 Relay 422</td>
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<td>Function #109 Relay 425</td>
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<td>Function #110 Relay 426</td>
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<td>Function #111 Relay 427</td>
<td>Terminal 427</td>
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<tr>
<td>Function #112 Relay 428</td>
<td>Terminal 428</td>
</tr>
</tbody>
</table>

2.16 Output Definitions  
When Motor Starter Panel SP2 is installed.

Terminal# 429 to 440  Functions 113 thru 124. These Functions can be set to effect Remote output relays R365 thru R372 as programmed in the function setup screen.

<table>
<thead>
<tr>
<th>Function #113 Relay 429</th>
<th>Terminal 429</th>
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<td>Function #114 Relay 430</td>
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<td>Function #123 Relay 439</td>
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<tr>
<td>Function #124 Relay 440</td>
<td>Terminal 440</td>
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</tbody>
</table>
2.17 **Output Definitions**  
When VSD 1 is installed.

Functions 125 thru 131. These Functions can be set to effect Variable Speed Drives #1 thru #7 as programmed in the function setup screen.

- Function #125: VSD #1
- Function #126: VSD #2
- Function #127: VSD #3
- Function #128: VSD #4
- Function #129: VSD #5
- Function #130: VSD #6
- Function #131: VSD #7

2.18 **Output Definitions**  
When VSD 2 is installed.

Functions 132 thru 138. These Functions can be set to effect Variable Speed Drives #8 thru #14 as programmed in the function setup screen.

- Function #132: VSD #8
- Function #133: VSD #9
- Function #134: VSD #10
- Function #135: VSD #11
- Function #136: VSD #12
- Function #137: VSD #13
- Function #138: VSD #14

2.19 **Output Definitions**  
When VSD 3 is installed.

Functions 139 thru 145. These Functions can be set to effect Variable Speed Drives #8 thru #14 as programmed in the function setup screen.

- Function #139: VSD #15
- Function #140: VSD #16
- Function #141: VSD #17
- Function #142: VSD #18
- Function #143: VSD #19
- Function #144: VSD #20
- Function #145: VSD #21
5.1 Power-up Menu

Upon power-up of the Tommy Premium Advantage, this menu will be displayed.

Touch the Hour, Minutes, or Date indicators to make any necessary adjustments.

Log in is required to perform any setup changes.

Tunnel Status  View the current wash operation and critical data
Ready To Wash  View and modify vehicles in line, ready to be washed
Output Control View, operate, and modify controlled outputs
Monitor Menu   View the status of all input signals
Setup Menu     Setup all aspects of the Tommy Premium Advantage
Reports Menu   View and print daily counters
Alarms         View current alarms and a history of past alarms
Start Wetdown  Start the wetdown sequence
Lighting       View and modify outputs designed to operate location lighting
Chemical Tanks View and modify tank monitoring parameters
5.1.1 Log In / Out Menu

Login Help

All of the screens are accessible regardless of login credentials, but the ability to change parameters is restricted according to login level.

Unique user names can be entered and an access level assigned.

For Example:

'Admin' level is usually assigned an access level of 2. An access level of 2 is required to change any of the setup parameters.

'Super' level is usually assigned an access level of 1. An access level of 1 is required to select and change any of the Auto/Off/Manual switches.

'Operator' level is usually assigned an access level of 0. This is primarily a view only access level.

All of the Logins and access levels can be customized from this screen by entering the master login and password.

Master Login - ADMIN
Password - CCS
5.1.3 Tunnel Status

View the current wash operation and critical data

The Tunnel Status screen will display current wash performance information. The Ready To Wash menu will indicate the number of vehicles entered in line, ready to be washed. Counters show number of vehicles washed. Conveyor speed is shown in cars per hour and feet per minute, based on data entered into the pulse and gate setup screens. Average washed rate is an indication of the real time rate that vehicles are being washed, or a projected washed rate. This can be compared with the conveyor speed car per hour.

Pilot lights will show proper car wash equipment operation. Red indicates an open Wash Stop button, which will stop the conveyor and equipment operation. The Anti Collision indicator will glow Red when the conveyor is paused because of vehicle backup at the conveyor exit.

Warning Horn, Conveyor Output, and Roller Raise Outputs are monitored from this screen. A red output.

The Pulse pilot light will blink green with normal operation, and will blink blue when in Standby Pulse operation. The Gate pilot light will be green when a vehicle has entered the photo eye or other sensing device at the front of the wash. The Tire pilot light will be green when a wheel has given an input signal.

When the Wet Down sequence is started, the Wet Down timer will appear and count down the sequence seconds.
5.2  Output Control

View, operate, and modify controlled outputs

These menu pages allow the user to directly affect the controlled outputs in the Tommy Premium Advantage. A security level of “0” allows viewing only. Security level “1” allows the AUTO—OFF—MAN selector switches to be used, and security level “2” allows changes to be made to the function setup and description. A green pilot light indicates that the output is “on”.

When an output is forced on manually, the yellow MAN button will blink.

Log in is required to perform any setup changes.

Scroll back and forth between the screens, or press “Menu” to go back to the Tunnel Status screen.

Unique function names can be entered to accurately identify each function output. Terminal numbers indicate the output terminal associated with the function. Pressing the setup button will advance the menu to the Function Setup Screen.
5.3 Setup Menu

From this menu, navigate to all setup areas necessary for proper operation of the Tommy Premium Advantage.

5.3.1 Module Enable

The Tommy Premium Advantage is a modular system for ease of installation and future expansion. Adding modules is a simple “plug & play” procedure. From this screen, modules are enabled. A key is required to add a module. This key will be provided when an additional module is purchased.

The Health pilot light indicates proper communication to the remote modules. If an enabled module is showing a red health condition, please contact Custom Control Specialists for technical support.
5.3.2c Conveyor Setup Menu

Conventional Conveyor Setup Help

1. The conveyor can be set to start automatically if desired. Choose to automatically start when a wash package is loaded, or when a vehicle activates the Axle Prox sensor. Disabling the Automatic Start feature will require a manual start.

2. Enter the desired number of seconds the Warning Horn is to sound before the conveyor starts.

3. Enter the desired number of seconds delay after the Warning Horn sounds, before the conveyor starts.

4. Enter, in number of Pulses, the desired running time the conveyor will run for each vehicle. The Auto Shutdown Feature is reset each time a vehicle is loaded to be washed, or enters the Gate Sensor. Entering a value of “0” will disable the Auto Shutdown Feature.

5. Adjust the Anti Collision feature by entering, in pulses, the location the conveyor is to stall to prevent a collision at the exit of the car wash tunnel. Setup this feature by parking a vehicle on the end of the conveyor and determining where a second vehicle, traveling on the conveyor behind it, is to stall. The conveyor will restart again after the first vehicle pulls away. Entering a value of “0” will disable the Anti Collision Feature.

6. The Conveyor and Warning Horn outputs can be manually operated from this screen with the AUTO-OFF-MAN pushbuttons. When the Conveyor is forced on, a small red will flash on this screen and the Tunnel Status screen, indicating a "Forced Output".
5.3.2v Conveyor Setup Menu

Variable Speed Drive, Belt, or Loading / Production Conveyor Setup Help

1. For conveyors driven by Variable Speed Drives, answer the question “Yes” in the Advanced Setup Menu, and the Conveyor Setup menu will change appearance to reflect VSD setup parameters.

2. Control the Conveyor, or Production Belt VSD, and Loading Belt VSD if installed.

3. The loading belt speed is normally matched to the production belt speed, but can be adjusted to run slightly faster or slower. Speed is adjusted in hertz (Hz) from 0-60.

4. The Production Conveyor, Warning Horn, and Loading Belt outputs can be manually operated from this screen with the AUTO-OFF-MAN pushbuttons. When the Conveyor is forced on, a small red will flash on this screen and the Tunnel Status screen, indicating a “Forced Output”

5. Enter, in number of Pulses, the desired running time the conveyor will run for each vehicle. The Auto Shutdown Feature is reset each time a vehicle is loaded to be washed, or enters the Gate Sensor. Entering a value of “0” will disable the Auto Shutdown Feature.

5. Adjust the Anti Collision feature by entering, in pulses, the location both conveyors are to stall to prevent a collision at the exit of the car wash tunnel. Setup this feature by parking a vehicle on the end of the production conveyor and determining where a second vehicle, traveling on the conveyor behind it, is to stall. The conveyors will restart again after the first vehicle pulls away. Entering a value of “0” will disable the Anti Collision Feature.

6. The conveyors can be set to start automatically if desired. Choose to automatically start when a wash package is loaded, or when a vehicle activates the Axle Prox sensor. Disabling the Automatic Start feature will require a manual start.

7. Enter the desired number of Seconds the Warning Horn is to sound before the conveyors start.

8. Enter the desired number of Seconds delay after the Warning Horn sounds, before the conveyors start.
5.3.3 Pulse Sensor Setup Menu

Pulse Sensor Setup

PULSE SENSOR CHOICE
One or two Pulse Sensors can be installed. Determined which sensor to use by entering a "1" or "2" in the data field.

STAND BY PULSE RATE
If one or both of the Pulse Sensor(s) fail, choose "3" for Stand By Pulse Sensor. The rate of the Stand By Pulse can be set manually, or by pressing the "SET PULSE" button while the conveyor is running. This button must be pressed whenever the conveyor speed is changed in order to be accurate. Otherwise, the rate can be adjusted manually.

AVERAGE PULSE LENGTH
Enter the distance in inches the conveyor travels between each pulse for accurate status calculations. This number can be determined by counting the number of pulses during ten feet of measured conveyor travel. Divide 120 by the number of pulses counted. This is the distance in inches that the conveyor has traveled per pulse. Round off this number to the nearest whole number and enter that number into the data field.

SET PULSE will enter a number calculated by the PLC into the Pulse Rate data field.

PULSE FAULT TIMER SET POINT
Enter the time in 100ths of a second that the conveyor will be allowed to run without seeing a pulse before a fault occurs. (1 to 10 seconds) Example 400 equals 4 seconds.

INTERPOLATED PULSE
The actual pulse input rate resolution can be made higher and more accurate by adding more virtual pulses between the actual pulses, thereby creating an interpolated pulse rate. The interpolated pulse rate is adjusted with each actual pulse input maintaining accuracy with the conveyor speed. Choose which actual pulse input to interpolate by entering a "4" or "5" in the Pulse Choice data field. Access the interpolation setup menu by pressing “Diagnostics” on the first page.

Pressing AUDIBLE TEST will cause the Warning Horn to sound when the pulse sensor is activated. This is for circuit testing purposes only.
5.3.4 Entrance Gate Sensor Menu

The Entrance Gate Sensor locates and measures the vehicle as it passes through the sensor. Photo electric beam sensors are recommended, but other types of sensors may be used. The tunnel sequence is initiated based on packages entered and assigned to the vehicle, and the settings of the various functions and outputs.

Choose the type of signal desired. Dual sensors can be installed if desired. Enter a "1" or "2" to choose between the two. Enter a "3" to accept both inputs. This method provides some redundancy as either signal will be accepted.

If the sensor fails to operate properly, enter "4" to operate in Standby Gate. This will allow the wash to continue operation by sending a vehicle of the average length into the wash tunnel after a roller raise input signal. Enter the distance from the front of an average vehicle to the Gate Sensor. Also enter an average length of vehicle in feet for Standby Gate and Status calculations.

Gate Sensor ON and OFF delay reduces "bounce", or the chance of multiple signals. A recommended setting of 1 second can also reduce nuisance trips due to people walking through a photo eye beam.

If a gate signal is shorter than the minimum vehicle length, the vehicle will not be taken from the Ready To Wash Line and the gate sensor signal will be ignored.

Setting "Ignore Gate until Roller-Raise?" to YES will cause the gate sensor signal to be ignored until a vehicle is launched, or sent, with a roller raise.

Pressing AUDIBLE TEST will cause the Warning Horn to sound when the gate sensor is activated. This is for circuit testing purposes only.
5.3.5 Tire Sensor Setup Menu

Tire Sensor Setup

Tire Sensor Signal Extension | 1 | Seconds

The Tire Sensor input signal can be extended to reduce the possibility of "bounce", or multiple signals per tire. A setting of 2 seconds is recommended.

5.3.6 Roller Raise Setup Menu

Roller Raise Setup

Enter, in pulses, the length of time the roller forks are to be raised.

Answer Yes to "Auto Roller Call?" if a Axle Prox sensor is to be used to automatically raise the roller, such as in an Auto Load setup. Auto Roller Call can be delayed if desired.

A roller position sensor, wired to Input Terminal 020, will delay the roller forks until a roller is in the correct position. Answer Yes if this feature is desired.

If an Auto Load setup is used, along with Auto Roller, front wheel pull or rear wheel push is determined by entering the number of signals accepted by the Axle Prox input (terminal 018). "1" is for front wheel pull, "2" is for rear wheel push.

The Roller Raise output can be manually operated from this menu with the AUTO-OFF-MAN pushbutton. The Tunnel Status screen will display a F when roller raise output is in the MAN position.

Additional rollers can be added behind a vehicle or wheel by pressing a Roller Raise input button wired to terminal 017.
5.3.7  Equipment Safety Sensor Group Selection Menu

Equipment Safety Sensor Group Selection Help
The Base and each remote module has several safety sensors built in. Select the desired module. The Remote Module must be installed and in proper “health” or the choice will be blacked out.

5.3.8  Equipment Safety Sensors Setup Menu

Equipment Safety Sensor Setup Help
Safety Sensors can be configured to protect an output device, or to trigger an alarm in a fault condition. The red/green pilot light indicates whether the switch is in alarm or not. Assign a function number to the switch. The assigned function will operate only when the switch is not in alarm condition. Choose to activate the alarm on a low or high condition.

When one switch, such as a low level float, is to affect several functions, use a jumper wire to connect the switch to multiple input terminals, and assign several function numbers to the same switch input.

Conversely, if a function is affected by multiple safety sensors, you may wire them in series to one input.

A unique name can be entered to describe the sensor.

A safety switch can also be used as a progress switch input.

Check Email to send an email or text message regarding this sensor in an alarm condition.
5.3.9  Module Selection Menu

When setting up a function for proper operation, first choose the module that controls that function. The Remote Module must be installed and enabled or the choice will be grayed out.

5.3.10 Function Description and A-O-M Setup Menu

Function Description Help

SETUP - Navigation button will advance to the Function Setup screen for the selected output.

TERMINAL - Output terminal number assigned to the function.

DESCRIPTION - Enter a unique name or description. Maximum 25 characters.

INDICATOR LIGHT - This light will turn green to indicate the output is turned on.

Note: The operator must be logged in with a security level of 1 or greater to make changes to the following AUTO/OFF/MANUAL switches.

AUTOMATIC - Normal operating position. If selected, the program has automatic control over the output. The output will turn on and off when a vehicle reaches the set points entered in the Function Setup page.

OFF - This switch will disable the output.

MANUAL - This switch will force the output on. The button will flash to indicate that the output is in forced on.
5.3.11 Function Setup Menu

Function Setup Help

A function in the Tommy Premium Advantage will operate an output based on the data entered into this screen.

Note: A security level of 2 is necessary to make changes to values on this page.

1. Choose the Wash Code (0-32) that will turn on this function. Wash codes are grouped into packages in the Wash Package Setup Menu. Each function will point to only one wash code. If a function is to be used as a Tire Application, select a unique wash code for each tire application group.

2. Select whether the function timing is configured to start based on the front or rear of the vehicle. Example: a spray bar application designed to apply pre-soak chemical to the vehicle would be set to “Start when the FRONT of the vehicle is at 25 pulses” and “Stop when the REAR of the vehicle is at 25 pulses”. Another example: an application designed to apply a chemical to the front grill area would be set to “Start when the FRONT of the vehicle is at 30 pulses” and “Stop when the FRONT of the vehicle is at 33 pulses”. The application would be ON for 3 pulses at the front of the vehicle only. In the same way the function can be set to turn on an output based on the rear of the vehicle only.

3. Enter the desired data, in pulses, when the selected function should start and stop.

4. Lookback- Will hold a function on if there is another vehicle coming down the conveyor. Enter the pulse (point on the conveyor) that the function is to look back to for advancing vehicles.

5. Wetdown - Toggle this selection to cause this output to operate during the wetdown routine.

6. Flash - Toggle this selection to cause the function's output to flash when on. Example: Tunnel lights and signs.

7. Tire application - A non zero entry in this box causes the function to turn on when it sees a tire and turn off after the time in seconds entered here. Note: 'Start at pulse' is now keyed off of the front tire instead of the front of the car. The position of the rear tire is automatic and does not need to be entered. Be sure to set START FRONT and STOP REAR data the same.

8. Sequential Start - This will help protect against electrical surges and over-loads when the car wash tunnel is stopped and re-started.

Enter a number between 0 and 4. Zero means that the function will start as soon as the conveyor restarts. One through four selects a timer (configurable under the Sequential Start setup menu) that will delay the function re-starting.

Travel Distance from the Gate Sensor aids in Function Setup by showing the number of pulses from the front of the vehicle back to the Gate Sensor.
5.3.12 Sequential Start Setup Menu

Sequential Start Setup Help

Sequential Start - Purpose: To help protect against electrical surges when the conveyor re-starts.

Enter the time in milliseconds for each sequential start timer in the range of 0-2,000. I.E. 2,000 equals 2 seconds.

As soon as the conveyor starts, timer 1 starts timing. After timer 1 is completed, timer 2 starts timing and so on.

From the function setup screen: Enter a number between 0 and 4. Zero means that the function will start as soon as the conveyor starts. One through four selects a built in timer that is configurable under the sequential start setup menu.
5.3.13 Wash Package Setup Menu, Wash Codes

Begin by defining as many of the 31 available Wash Codes as necessary to separate the functions into sequential (every vehicle), programmable (selected), or de-programmable (unselected) groups. Functions will “point” to a wash code as programmed to operate on the vehicle being washed or not. Wash codes are grouped into Wash Packages or used individually as ala carte items that can be added to packages.

Wash code “0” is often set aside as the code for sequential functions.

Assign a wash code for each tire application group, such as tire cleaner, wheel cleaner, wheel blast pumps and flips.

Wash Codes are also used to control Package Lights outputs and counters.

Up to 36 Wash Packages can be built in one of two ways, Replace and Program/Deprogram.

Note: Pushbutton 1 is the default wash package that is loaded for any car that enters the wash without having been assigned a wash package. If a default wash is not desired, do not configure Pushbutton #1.

Each car wash Function will operate from only one of the wash codes (numbers 0 through 30). However, each pushbutton can be configured to program as many of the wash codes as desired. Select the desired wash codes to be included in each wash package. **NOTE:** Wash Code “0” should be used as a sequential wash code for all packages or individual ala carte that are “washes”. Do not used Wash Code 0 as a tire application.
5.3.14 Wash Package Setup Menu

Input Terminals 025 through 040, and 049 through 060 are designed to accept a 24v DC PNP (+) signal from a manual pushbutton or a POS system with closed contact outputs emulating a pushbutton closure. These inputs, along with a momentary signal to the LOAD Input (Terminal 016) will build a wash line of vehicles ready to be washed. The wash line can hold up to 10 vehicles.

Note: A security level of two or greater is required to make changes to these menu screens.

Additionally, Pushbutton 1 is the default wash package that is loaded for any car that enters the wash without having been assigned a wash code. If a default wash is not desired, do not configure Pushbutton #1.

Pushbutton input signals wired to terminals 025 through 040 affect those vehicles at the front of the wash line only.

Pushbutton input signals wired to terminals 049 through 060 in conjunction with the Load button input will place vehicles in the wash line, ready to be washed.

A pushbutton can be set to one of three different modes:

**DISABLE** - Pushbutton is ignored.

**REPLACE** - This pushbutton will replace all codes entered from any pushbutton pressed before it, including empty codes. For example, Operator presses PB1, then PB2. If PB2 is setup for replace mode, only codes added by pressing PB2 are loaded. Any codes that were added by pressing PB1 are discarded. Note: Setting a PB in this mode w/ no codes selected turns the PB into a clear button.

**PROGRAM / DE-PROGRAM** - When pressed, codes setup for pushbutton are added or subtracted to those entered from any button pressed before it. When this mode is selected, a green + sign or a red — sign will appear next to selected wash codes. Green marked codes will be added to the wash given, red marked codes will be deleted.

Be sure to press the “Apply” button to lock in the selection.
5.3.14 Wash Package Setup Menu cont.

Example of a wash package in Replace mode. All previous entries are erased and replaced with selected wash codes.

Example of a wash package in Program / De-Program mode. In this package, all selected wash codes are added to any previous selections, if any.

Example of a wash package in Program / De-Program mode. In this package, green selected wash codes are added and red codes are deleted from the wash package selection that may have preceded it.

Example of an a la carte wash package in Program / De-Program mode. In this package, green selected wash codes are added and red codes are deleted from the wash package selection that may have preceded it.
Alarm Configure Help

For All Alarms:
Select "Alarm on High" or "Alarm on Low" depending on your hardware requirements. For example: If the Air Pressure sensor is setup for fail safe operation (maintains a power input to the plc when air pressure is ok) then you would select "Alarm on Low"

In order for the alarm to show up on the alarm banner, alarm log, or email, or function in the plc (exception: stop button), the alarm must be enabled by checking the Enable/Disable box.

Checking the Email/SMS box causes an instantaneous email or text message to be sent upon an alarm condition.

The alarm indicator light turns green (if alarm enabled) if NOT in an alarm condition. If the indicator turns red then an alarm is active.

Chain Tension Sensor optional (Input Terminal #14) - This alarm is used to notify you if the conveyor chain needs tightened. Note: This will NOT shutdown the conveyor.

Phase Monitor optional (Input Terminal # 15) -
An installed phase loss monitor will alert the GWC of electrical phase loss and over/under voltage conditions and stop all operation to protect motors and sensitive electrical equipment.

Oil Level Sensor (Input Terminal #23) -
This alarm is used to monitor hydraulic oil level for your conveyor motor etc. If an alarm occurs, the car wash conveyor will stop.

Air Pressure Sensor (Input Terminal #24) - This alarm will monitor air pressure in the car wash system. If an alarm occurs, the conveyor will be stopped.

Pulse Fault (Input Terminal(s) #10 and/or #11) -
This alarm looks at the pulse input configured on the pulse setup screen. If the conveyor is being told to run and the controller does not receive a pulse signal input for the time configured on the pulse setup screen, then a pulse fault alarm will be generated. Note: This alarm is for information purposes only and does not affect the operation of the car wash.

Stop Pushbutton (Input terminals #1 thru #5) -
This alarm is for information, troubleshooting, and/or logging purposes only. Disabling this alarm does not affect the operation of the stop buttons.
5.3.16 Wash Package Lights Setup Menu

Wash Package Lights Setup Help

Wash Package Lights are 8 outputs included with Base Output Module S3. These outputs can be used to activate informational lights or signs that can inform the customer of services purchased. The outputs can be operated with the Auto/Off/Manual selector switches. Program the output to activate by entering a Wash Code. See Pushbutton Setup instructions. Wash Package Lights will turn on based on the Wash Codes programmed to the first vehicle in the wash line. Wash Package Lights can also be used as counters to tabulate package wash counts.

Auto/Off/Manual - Used mainly for troubleshooting, etc.
Auto - Light turns on and off automatically under plc control.
Off - Light will always be off.
Manual - Light will always be on.

Note: A login access level of 1 or greater is required to make changes to the following AUTO/OFF/MANUAL switches.

Code refers to the wash code set by the wash package pushbutton or Point of Sale system that will turn on the package light.

For example, wash package 1 is the only wash package that has code 13 enabled. If Package Light 2 is set to look at code 13, Package Light 2 will turn on when wash package 1 is purchased and in the first position in the wash line.
5.3.17 Wetdown Setup Menu

**Wet Down Setup Help**

Choose which functions are to be activated by the Wet Down feature by answering Yes or NO in the Function Setup Screens.

Set the Wet Down timer for the number of seconds desired.

Choose whether or not you want the conveyor to run during the wet down sequence.

The red count down timer registers the time remaining.

Start the Wet Down feature by pressing the Activate button for several seconds, until the red count down timer starts timing down.

Starting the Wet Down feature remotely is accomplished by pressing Pushbuttons #7 and #8 simultaneously for several seconds until the warning horn sounds and the marked equipment starts. This is an additional feature of PB7 and PB8, and these pushbuttons can still be programmed for normal inputs.

The Wash Down feature is cancelled three different ways - the timer completes its cycle, a Wash Stop button is pressed, or a Start button is pushed. If a Wash Stop button is pushed, the Wet Down feature must be re-activated from the beginning.

5.3.18 Backup / Restore Data

Data can be saved from the PLC to a compact flash card located in the Magelis HMI and restored back again to the PLC.

This feature should be used anytime a change is made to the car wash setup.

Procedure is as follows:

From the Data Group drop down menu, choose the group to be either saved or restored.

From the Data File drop down menu, choose the file to be saved or restored.

To choose to save data from the PLC to the CF card, or restore data from the CF card to the PLC.
5.4.1 Adding Vehicles to the Wash Line

There are two ways to enter transactions into the wash line, building a stack or queue of vehicles ready to be washed

**Manual Pushbutton Box**

The manual pushbutton box provides a way to manually enter vehicles into the wash line when the pushbuttons are wired to terminals 049 through 060. Follow the setup procedures under Wash Package Setup 5.3.14. The procedure to wash a vehicle is simple. Choose a wash package, add other options if desired. Press the Load button to enter the vehicle into the Wash Line. Repeat the procedure as necessary, adding up to 10 vehicles and any one time. Press the Roller button to activate the roller raise output and send the first vehicle in the line into the wash tunnel.

**Automated Cashier System or POS Cash Management System**

An Auto Cashier or POS system with closed contact outputs emulating a pushbutton operation can be interfaced with the Tommy Premium Advantage System to enter paid transactions into the wash line. The output of the auto cashier or POS system will connect to terminals 049 through 060. Signals can be staggered or received simultaneously, but must include an input to the Load button, terminal 016. The wash line will hold up to 10 vehicles. Wash packages will be washed in the order they are received.

Follow the setup procedures under Wash Package Setup 5.3.14 to build the desired wash packages.

5.4.2 Pushbutton Control At The Wash Entrance

Manual pushbuttons wired to terminals 025 through 036 will affect the first car in the wash line only. This setup is often used when the car wash entrance is attended. An attendant can add mechanical options such as retracts or truck options to the wash package as it enters the wash tunnel.

If a simple cash register is used, or the attendant accepts cash payment at the wash entrance, this is a simple way to enter wash packages and options.

It is not necessary to utilize the Load pushbutton in this situation.

Follow the setup procedures under Wash Package Setup Menu 5.3.14 to build the wash packages and options desired.
5.4.3 Ready to Wash - Wash Line Management Menu

**Ready To Wash Help**

This menu provides the ability to modify wash packages for cars already in the wash line.

A black Car - Indicates a car in line.

A yellow Car - Indicates a car in line is selected.

Press on a Black Car to select a car. The car will turn yellow indicating that it is selected.

To modify a car’s codes, select the car, toggle code buttons on and off and then hit ok.

Note: If you de-select all codes for a car and hit ok, the default codes will be added for that car (whatever codes are assigned to Wash Package #1).

To remove a car from the line (i.e. a car pulls out of line), select a car and press the ‘Remove Car’ button.

Selected cars will automatically shift with the actual cars in the line.
5.5 Monitor Menu

Choose the module to monitor input signals

5.5.1 Base Input Menu

Input terminals numbers match the actual wired terminals

Status red / green pilot light indicates a 24v DC (+) voltage applied to the terminal.

Use the “Next” button to navigate the various screens.

These screens can be used to verify proper wiring and signals are being received at the PLC.

Unique names can be given to each input.
### 5.5.2 Chemical Tanks Monitoring

The Tank Summary page will give a graphic representation of all monitored chemicals. Data levels reflect information entered in the Tank setup pages. Touch the colored tank description to move to the tank setup page.

<table>
<thead>
<tr>
<th>Tank Name</th>
<th>Size (gal.)</th>
<th>Level (gal.)</th>
<th>Refill Setpoint</th>
<th>Average Cost</th>
<th>Full</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paint</td>
<td>100</td>
<td>0.0</td>
<td>0.5</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Tire Cleaner</td>
<td>50</td>
<td>0.0</td>
<td>0.8</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Fuel</td>
<td>50</td>
<td>0.0</td>
<td>0.6</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Detergent</td>
<td>100</td>
<td>0.0</td>
<td>0.9</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Triple Coat</td>
<td>50</td>
<td>0.0</td>
<td>0.4</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Clear Coat</td>
<td>50</td>
<td>0.0</td>
<td>0.3</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Heavy Agent</td>
<td>50</td>
<td>0.0</td>
<td>0.7</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Wax</td>
<td>50</td>
<td>0.0</td>
<td>0.2</td>
<td>0.0</td>
<td>0</td>
</tr>
</tbody>
</table>

### 5.5.3 Chemical Tank Monitoring Setup Pages

Each tank sensor can be given a unique name. Enter date filled, cost per gallon and refill set-point.

Enter the function number to be used as a reference point for number of vehicles washed.

Choose the proper tank size by pressing the appropriate gallon.

Pressing the Reset button will recalculate the information in the right hand column. If at anytime the chemical level becomes unstable, the reset button will turn red.
5.6.1 Variable Speed Drives

Variable speed drives provide the highest level of control for motors used in the car wash. They are most often used for dryer applications, but are also used to control high pressure pump and hydraulic pump motors. Many conveyors are also controlled by VSD's because of the precise control that can be achieved in addition to energy savings. A VSD setup to control a dryer motor is about 40% more efficient than a standard contactor type starter.

From the Module Selection Menu, select the desired VSD group to advance to the VSD function description screen. Unique motor descriptions can be entered. Choose Automatic, Manual or Off positions. The manual position will force the VSD to run the motor at the speed entered in the Speed Setpoints section of the VSD Setup Screen. The speed command will reflect the motor speed reference in hertz. The pilot lights will also indicate the speed reference being sent to the motor. Green indicates high speed. Blue indicates a low speed reference. Yellow indicates a manually forced reference.

In the VSD Setup Screen, setup the VSD as a normal output function. If a low speed between vehicles is desired, enter a look back pulse reference and choose either a “Slow” or “Fast” look back speed. Enter Low, High, and Manual speed set points. If used to control a dryer motor, the VSD can be programmed to slow to low speed over the front, rear, or the entire vehicle. Set a wash code in the wash package setup and use the code to reference a slow dryer operation. Adjust the slow dryer timing by pulses over the front or rear of the vehicle. Enter a wash code of 16 to disable the slowing feature.
6.1.1 Manual Entry Station

The manual entry pushbutton station is normally installed at the car wash tunnel entrance, near the area that an operator or attendant would stand while making eye contact with the vehicle driver.

The “Stop” and “Start” pushbuttons will control the car wash conveyor.

The “Roller” pushbutton is wired to input terminal 017 and is a manual way to call for a conveyor roller, or “roller raise”. Rollers can only be called for if there is a car in the wash line, ready to be washed. Additional rollers can also be called for if the vehicle has not yet entered into the wash tunnel.

The blue pushbuttons are normally wired to input terminals 025 thru 036. These can be assigned wash packages, ala carte items, or any combination of the two through the wash package setup menus. There provisions for up to 12 pushbuttons.

Note that pushbuttons wired to these input terminals effect the front of the wash line only. Vehicles may be added one at a time here, or if a POS system is installed and adding vehicles to the wash line, the first vehicle in line is affected by the additional button presses made here. This can be useful to add safety items such as top brush retract, or truck bed slowdown functions to the wash package.
6.2.1 QPOS Wash Entry Station

The QPOS Entry System is a touch screen complete entry system, capable of entering wash packages, individual items, or combinations of both. Vehicles can be added to the wash line, or modified while in line. While the QPOS is not meant to replace a point of sale or cash register, it will perform basic arithmetic, print a simple receipt with the optional printer, and operate a cash drawer.

ADD - Use this button to add a vehicle to the end of the wash line. The wash line will hold a maximum of ten vehicles. When the ADD button is pressed, the selection page will appear. Select the packages or item combinations desired and press “Yes”.

After returning back to the wash line screen, TENDER the sale if desired and enter the cash paid amount. If a receipt is desired, PRINT the transaction.

INSERT a vehicle by selecting the vehicle number behind the point of insertion. Enter the wash normally, and the inserted vehicle will be in the wash line in the correct order.

MODIFY a vehicle by choosing the desired vehicle to be modified, and completing the same operations.

DELETE a vehicle from the wash line by selecting the desired vehicle, pressing “Delete”, and confirming with “Yes”.

START the car wash conveyor and raise a ROLLER when a vehicle is in the wash line, ready to be washed.
6.2.2 QPOS Wash Entry Station Setup

Pressing the MENU button will open the setup window.

STATUS - Displays current wash tunnel status.

$ SETUP - Displays POS Pushbutton setup screen.

PACHAGE SETUP - Displays Wash Package setup screens.

ALARMS—Displays a list of active alarms conditions. This can be useful in diagnosing problems.

HISTORY - Displays a list of past alarms conditions and their resolutions. This can be useful in diagnosing problems.

START WETDOWN - This pushbutton will start the wash tunnel wetdown sequence as programmed.

POS - Return back to the wash entry screen.

CLOSE - close the small setup menu.
7.1  Lighting Panel

The Lighting Panel is an optional module added to the Guardian Wash Command System. It will control outputs based on the day of the week and the time of day. Manual HAND-OFF-AUTO selector switches are included on the panel door.

There are two setup screens, each with four clock functions. Enter the desired start and stop time in a 24 hour format. Select each desired day of the week by touching the day button.

The flashing beacon indicates a “ON” condition.
10.1 Reports

The "Reports" screens will provide various counts and speed calculations. Cars Washed This Hour, and Cars Washed Last Hour are calculated numbers. Today's Total and Yesterday's Total will reset to zero at midnight. Total Washed is not resetable.

Cars Per Hour and Conveyor Speed in Ft/Min are based upon information entered in the Pulse and Gate Sensor Setup Screens. These are provided as a guideline for car wash production.

Average Washed Rate -
Real Time wash rate based on the last 10 washes in cars per hour.

Wash Package Counters -
Counters advance as configured wash packages enter the wash area of the car wash (past the gate photo-eye). These counters mirror the Package Lights set up. The Package Light auto/off/man switches do not affect the counts.

Custom Reports - (Located on Page 2)
Enter a function number to display its counter data. This is a dynamic display that can be changed as necessary. the counter includes the number of times the function was placed in manual operation. Today's count is moved into yesterday's count 1 second after midnight. Select the function that you want to examine (1-154). Select 0 to clear the line.

A report of these counters can be printed on a receipt tape if a printer is installed.