Chapter 3

Vendor Installation and Programming

Vendor Installation

Unpack the vendor: Unwrap the vendor and remove any padding. Check for signs of damage at the time of delivery, if the vendor is damaged, contact the carrier immediately. The carrier will instruct you as to the procedure for filing a claim.

Notes:
1. The vendor keys are located in the coin return cup.
2. Remove stretch-wrap if storing the vendor in direct sunlight.

Removing the shipping skids: Separate (split) each skid section by inserting either a claw hammer, crow-bar, or similar device into the slot of each section to break apart. Tilt the vendor slightly to remove the separated pieces. (fig.3a)

Placing the vendor on location: When placing the vendor on location, allow for a minimum of four inches (4") of space at the rear of the vendor. This will ensure proper ventilation of the refrigeration system (fig. 3b).

Level the vendor: Level the vendor by adjusting the four leveling legs on the bottom corners of the vendor. The vendor is level if the main door remains stationary when opened to different positions. The four leveling legs must be in contact with the floor (fig. 3b). This is imperative for proper drainage of evaporator frost.

Voltage requirements: The vendor is designed to operate at a voltage of 115 volts, 60 hertz. It requires a minimum of 15 amp service. The service outlet voltage must not exceed 129 VAC or fall below 103 VAC.

Vendor power cord: The vendor has a 3 prong, three wire, grounding cord. The vendor must be plugged into a grounded electrical outlet to protect the customer from an electric shock. If you are not sure your outlet is properly grounded, have it checked by a qualified electrician.

Note: Extension cords are not recommended unless they are authorized before use by a certified electrician.

When you plug in your vendor you should observe the following:
1. The florescent lights displaying the vendor sign will come on.
2. The refrigeration compressor will start to run after approximately 3 minutes.
3. The L.E.D. display will light.

Controller Programming

Introduction to Programming

Controller programming refers to the process of assigning prices for selections, setting space to sales (columns to buttons), setting the refrigeration parameters (including cut in/cut out temperatures) and setting other optional settings (including the configurations and the on/off timer) just to name a few. In other words, customizing your vendor for its particular location to achieve maximum sales and to obtain as much information about your account as possible.

Concerning vending, the three most important settings are the space to sales mode, selection depth mode and the double columns mode. These settings should be set correctly for your type of vendor from the factory. If these settings are incorrectly set, you could experience erratic vending problems (multiple vending, slow vending or vending from the wrong column).

The following section outlines how to program your "Merlin III" by describing the three menus available: 1) Service Menu: Service functions only; read errors, test vend, coin payout, etc. 2) Password Protected Menu: Vendor setup; set pricing, set space to sales, etc. 3) External menu: Read errors & can counts.
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Within the control board's three menus are several modes. Each mode will allow you to perform a different function.

IMPORTANT NOTE: It is recommended that you follow through the program steps thoroughly to become familiar with the programming buttons, each mode and the vendor's capabilities.

Programming Button Functions

The Merlin III vendor uses what is known as 3 button programming. To program your vendor, you need to press the control board's mode button, then you will use the first three select buttons to accomplish all programming. If anything needs to be remembered about programming, this is it! The pages to follow will review steps to program each mode. All steps will use the names listed below instead of the select switch number. It is extremely important that you be able to match the select switch number to its name!

<table>
<thead>
<tr>
<th>SELECT SWITCH</th>
<th>NAME</th>
<th>REQUIREMENT</th>
<th>USAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Switch #1</td>
<td>&lt;up&gt;</td>
<td>Press and release</td>
<td>Increase, Next, etc.</td>
</tr>
<tr>
<td>Select Switch #2</td>
<td>&lt;down&gt;</td>
<td>Press and release</td>
<td>Decrease, Previous, etc.</td>
</tr>
<tr>
<td>Select Switch #3</td>
<td>&lt;enter&gt;</td>
<td>Press and release</td>
<td>OK, Accept, Save, etc.</td>
</tr>
<tr>
<td>Select Switch #3</td>
<td>&lt;home&gt;</td>
<td>Press and hold (2 seconds)</td>
<td>Escape, Return, Cancel, etc.</td>
</tr>
</tbody>
</table>

Selection #1 <up> = This selection is named the "Up Button". Its purpose is to move you to the next mode on a particular menu level. It will also allow you to raise the value of any current settings once into a desired mode, such as increasing a vend price once into the vend price mode. See the example listed below.

Selection #2 <down> = This selection is named the "Down Button". It performs just the opposite of the #1 select button; its purpose is to move you to the previous mode on a particular menu level. It will also allow you to lower the value of any current settings once into a desired mode, such as decreasing a vend price once into the vend price mode. See the example listed below.

Selection #3 <enter> / <home> = This select button may be the most important button of the three. Select button #3 serves two purposes:

1. If pressed and released (fairly quick) less than two (2) seconds, it will allow you to enter into a particular menu level in the quest to check or change current settings. During a set of program procedures you must use this button to allow you to enter level upon level until finally reaching the point where a change is desired. In some cases you must press this button one last time to allow the change. See the example listed below.

2. Pressing and holding select button #3 for two (2) seconds will bring you out of a particular menu level to the previous menu level, when done changing or viewing a setting. If this button is held for too long it will always take you to Return "Rtn" of the menu that you are currently in. This selection will also simultaneously "lock in" or save any settings while exiting a menu level. See the example listed below.

EXAMPLE: Test vend from motor #3 using the "tESi" mode of the "service menu"

After opening the vendors main door and pressing the control boards mode button the L.E.D. Display should show "rtn" (The starting point for all menus and modes).

1. Press <up> (select button #1) four (4) times to get to the motors test mode. The L.E.D. display should now show "tESi".
2. Press <enter> (select button #3) and quickly release. You should enter the "tESi" mode and the L.E.D. display should show "Co 1", this indicates column number 1.
3. Press <up> (select button #1) 2 times to go to column number 3. The display should "Co 3".
4. To vend from column number 3 press <enter> (select button #3) and quickly release.
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5. After vending, to exit the mode • If completely done, close the vendors main door to automatically exit the mode. • To go to another mode, press <home> and hold for 2 seconds. The display will show “tEST” and you will be at the code level of the service menu.

IMPORTANT NOTE: When “programming” settings it may be best to exit by “homing” out instead of just closing the vendors main door.

Menu Chart (CODE LEVEL)

Menu: The word “Menu” refers to a list of modes to choose from. It will also be referred to as the “code level”. Listed below are the service and password protected menus.

Mode: The word “mode” refers to a specific section of the program menu that will allow you to perform a certain function or that will allow you to customize the vendor. Sample: “pric”

Listed below are two of the three available menus (The service menu and the password protected menu). To travel through the menus press the #1 or #2 select buttons. Upon reaching the last menu on the list, you will “wrap around” and begin at the other end of the menu list.

The service menu is available upon opening the vendors main door and pressing the control boards mode button. At this point the display will start at “rtn” of the service menu.

The password protected menu must be entered by first going into the service menu and traveling to the “PASS” mode and entering the proper password. Upon doing this the display will show “CASH” and you will be at the beginning of the password protected menu.

<table>
<thead>
<tr>
<th>Service Menu</th>
<th>Password Protected Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Service Functions Only)</td>
<td>(Allows Setup or Service Functions)</td>
</tr>
<tr>
<td><img src="image" alt="Return to Greeting" /></td>
<td><img src="image" alt="Cash Counter Mode" /></td>
</tr>
<tr>
<td><img src="image" alt="Errors Mode" /></td>
<td><img src="image" alt="Vend Counter Mode" /></td>
</tr>
<tr>
<td><img src="image" alt="Coin Pay Out Mode" /></td>
<td><img src="image" alt="Price Setting Mode" /></td>
</tr>
<tr>
<td><img src="image" alt="Coin Tube Fill Mode" /></td>
<td><img src="image" alt="Space to Sales Mode" /></td>
</tr>
<tr>
<td><img src="image" alt="Column Vend Test Mode" /></td>
<td><img src="image" alt="Configurations Mode" /></td>
</tr>
<tr>
<td><img src="image" alt="Internal Password Mode" /></td>
<td><img src="image" alt="Selection Depth Mode" /></td>
</tr>
<tr>
<td><img src="image" alt="International language mode (Revisions 11.03 and higher)" /></td>
<td><img src="image" alt="Double Columns Mode" /></td>
</tr>
<tr>
<td><img src="image" alt="Set Timer Controlled Selections Mode" /></td>
<td><img src="image" alt="External Password Setting Mode" /></td>
</tr>
<tr>
<td><img src="image" alt="Time/Timer Setting Mode" /></td>
<td><img src="image" alt="Error Mode" /></td>
</tr>
<tr>
<td><img src="image" alt="Refrigeration Parameters Mode" /></td>
<td><img src="image" alt="Coin Pay Out Mode" /></td>
</tr>
<tr>
<td><img src="image" alt="Coin Tube Fill Mode" /></td>
<td><img src="image" alt="Column Vend Test Mode" /></td>
</tr>
<tr>
<td><img src="image" alt="Return to Greeting" /></td>
<td><img src="image" alt="Return to Greeting" /></td>
</tr>
</tbody>
</table>
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Service Menu

This section completely outlines all Service Menu modes including a description and operation for each. The service menu was designed to give ready access to several features such as vendor diagnostics, changer payout/accountability and column vend testing. This may come in handy for an operator, usually third party, which is not permitted to change vendor setup such as timer settings, space to sales or even prices. All vendor setup is done in the password protected menu that requires a password for viewing or setting and is described in the next section “password protected menu”. After 5 minutes without activity the control board will revert to the sales mode (the L.E.D. will show the greeting).

**RETURN**

By pressing the control board’s mode button, the display will show “rtn”. If <enter> is pressed when the display shows “rtn”, the controller will revert to a sales mode and the greeting will be displayed.

Pressing select button #2 will take you to “PASS”
Pressing select button #1 will take you to...

**ERRORS**

**Description:** This mode was designed to help diagnose vendor problems... Upon opening the vendor’s main door, the L.E.D. will flash any possible error (For a list refer to Chapter 5 “Reading Error Codes”). If there are no errors, the display will momentarily flash “none” and revert to the sales greeting (example: ICE COLD). The Errors Menu was designed to give you a detailed description of each Error.

**Operation:** If <enter> is pressed when the display shows “Error” the controller will enter into the errors descriptive display mode. At this point, the display will show any and all current vendor errors followed by the descriptive. If no errors exist “none” will appear on the display. If <home> is pressed anytime during this operation, the controller will return to the beginning code level (display shows “Error”).

**Clearing Errors:** To clear an error, wait until the error to be cleared is shown on the L.E.D. display, then immediately press either the <up> or the <down> button and hold it in for at least two seconds and the error will disappear. Follow this procedure for each error that you wish to clear.

Pressing select button #2 will take you to “rtn”
Pressing select button #1 will take you to...

**CPO:**

**Description:** This mode allows you to payout coins from the coin mechanism tubes through the control board. This mode is mainly used because some coin mechanisms do not have payout buttons/switches on them. This can also be used as a test to confirm the control boards ability to payout coins (will act the same as after a sale).

**Operation:** If <enter> is pressed when the display shows “CPO” the controller will enter the coin payout mode and display the lowest coin value (.05). Using <up> or <down> will allow the user to cycle through all coin values that are available for payout. If <up> or <down> is pressed and held at this point, a coin of the displayed value will be paid out. Coins will continue to payout as long as <up> or <down> is held down. If <home> is pressed during this operation, the controller will return to the beginning code level (display shows “CPO”).

Note: When using “tUFL”, we recommended that you use the “CPO” mode to payout.
Pressing select button #2 will take you to “Error”
Pressing select button #1 will take you to...
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**COIN TUBE FILL**

**Description:** This mode is used to keep inventory of the exact coin tube levels as each coin is inserted. During this mode the L.E.D. display will register each coin as it is inserted (in no particular order) and report its value to the vendor's control board. The control board will in turn, remember the coin mechanism's coin tube levels and automatically deduct coin each time a coin is paid out (through "CPO" mode or during a vend.). THIS MODE CAN ONLY BE USED IF A MULTI DROP BUSS COIN MECHANISM IS BEING USED.

Note: The use of the coin mechanisms manual coin payout buttons is discouraged to keep from corrupting the coin counts.

**Operation:** If <enter> is pressed when the display shows "tuFL" the controller will enter the coin tube fill mode. The L.E.D. display will go blank which will allow the deposit of nickels, dimes or quarters through the coin insert or coin acceptor inlet chute. If <home> is pressed anytime during this operation, the controller will return to the code level (display shows "tuFL").

Pressing select button #2 will take you to "CPO"
Pressing select button #1 will take you to...

**VEND TEST**

**Description:** The vend test mode is used to vend test by column, not by selection. After entering into this mode you will have to pick the column which is desired to be tested, then by pressing the enter button (#3 select button) the control board will vend from that column... No money needed. This mode is to vend test only, it will test the control boards ability to receive 110 volts at the vend motors connection and then distribute it to the proper vend motor upon command. It will also test the "mechanical" part of the vending circuit such as the vend motor oscillator or rotor and any shimming that may be used. It does not test the control boards coin acceptance/credit/payout circuit.

**Operation:** If <enter> is pressed when the display shows "tEST", the controller will enter the column vend test mode and the display will show "CO 1" (column 1). Using <up> or <down> will cycle you through all the available columns to be test vended (the display may show some columns that are not in your vendor; nothing will happen if a test vend is attempted from these columns.). If <enter> is pressed the controller will attempt to vend from the column which is being displayed. Pressing <home> will only return you to the code level (display shows "tEST") if a vend is not in progress.

Note: Test vents will not affect cash or sale counters.

Pressing select button #2 will take you to "tuFL"
Pressing select button #1 will take you to...

**INTERNAL PASSWORD**

**Description:** The internal password mode is used to access to the "password protected menu" (described later). The password protected menu contains all modes necessary for vendor setup. Without entering this password, no setup can be done.

**Operation:** If <enter> is pressed when the display shows "PASS" the controller will enter the internal password mode and the display will go blank. You will have 15 seconds to enter the proper password or the display will flash "tout" (timeout) and revert back to "PASS". If this happens, the process must be repeated to enter a password. The password is 4-2-3-7. The <home> button will have no affect during the internal password mode. After the password has been successfully entered, "CASH" will appear on the display and you will be at the beginning of the password protected menu.

(Without entering a password) Pressing select button #2 will take you to "tEST"
(Without entering a password) Pressing select button #1 will take you to "rtn"
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Password Protected Menu

The password protected menu allows access to all "set-up" modes and provides protection against unauthorized setup changes. All of the service menus are added to the end of the password protected menu in case some of their functions are needed.

This section completely outlines all password protected menu modes. Including descriptions and operation instructions for each mode. After 5 minutes without activity the control board will revert to the sales mode (the L.E.D. will show the greeting).

[CASH]

CASH COUNTER

Description: The cash counter mode allows you to manually extract the amount of cash taken into the vendor through product sales (up to 999,999.99). The cash counter mode consists of a total count which is non-resettable and individual counts per selection which are resettable depending upon the proper configuration setting (see configurations). The counts may possibly be displayed in up to two sets of 4 digits. Examples for both types of counters are as follows:

1. If the total cash count was $56,789.10. Upon entering the cash mode the display would flash "CASH", followed by "567", followed by "8910".

2. If the individual cash count for selection 1 was $6,789.10. Upon accessing the individual count for selection 1 the display would flash "CS 1", followed by "67", followed by "8910".

Operation: If <enter> is pressed when the display shows "CASH" the controller will enter the cash counter mode and the display will flash "CASH" then the total amount of cash taken into the vendor. This will possibly be shown in two sets of 4 digits (as shown in example 1 above). Using <up> or <down> will cycle through individual cash counts for each selection and the display will flash individual counts as shown in example 2 above. If <home> is pressed anytime during this operation, the controller will return to the code level (display shows "CASH").

Clearing individual counters: If the configurations mode is set to allow the external individual counters to be reset, the individual counters will reset upon reading at least one of them and closing the vendors main door or actuating the vendors door switch.

IMPORTANT NOTE: Resetting one individual count will reset both cash and sale individual counters.

Pressing select button #2 will take you to "rtn" of password protected menu
Pressing select button #1 will take you to...

[SALE]

SALE COUNTER

Description: The sale counter mode is very similar to the cash counter mode. It allows you to manually extract the amount of product dispensed through your vendor (up to 99,999,999). The sale counter mode consists of a non-resettable total count and individual counts per selection which are resettable depending upon the proper configuration setting (see configurations). The counts may possibly be displayed in up to two sets of 4 digits. Examples for both total and individual counters are as follows:

1. If the total product vended was 5,678,910. Upon entering the sale mode the display would flash "SALE", followed by "567", followed by "8910".

2. If the individual sale count for selection 1 was 678,910. Upon accessing the individual count for selection 1 the display would flash "SL 1", followed by "67", followed by "8910".

Operation: If <enter> is pressed when the display shows "SALE" the controller will enter the sales counter mode and the display will flash "SALE" then the total amount of sales made by the vendor, possibly in two sets of 4 digits as shown in example 1 above. Using <up> or <down> will cycle through individual sale counts for each selection and the display will flash
individual counts as shown in example 2 above. If <home> is pressed anytime during this operation, the controller will return to the code level (display shows “SALE”).

Clearing Individual Counters: If the configurations mode is set to allow the external individual counters to be reset, the individual counters will reset upon reading at least one of them and closing the vendors main door or actuating the vendors door switch.

IMPORTANT NOTE: Doing this will reset both cash and sale individual counters.

Pressing select button #2 will take you to “CASH”
Pressing select button #1 will take you to...

Description: The price setting mode is used to set prices. Depending on the configurations mode settings (discussed later in this section), this mode will allow you to set either single or multi-pricing.

When the configurations are set to allow single pricing, only one price has to be set in the “PriC” mode (not individually) and the current price will be displayed on the L.E.D. display during the greeting.

If the configurations are set to allow multiple pricing (per selection), the display will not show the vend price during the greeting and you will have two options when setting prices:
1. Majority Pricing - You have the option to set a majority price and then if you wish, set individual prices for a few or all of the selections (similar to single price). This will cut down on programming time.
2. Individual Pricing - You have the option to skip the majority pricing (or after setting majority pricing) section and go immediately to individual pricing to price each selection individually.

Notes: 1. If the space to sales and the configurations are not set properly you may not be able to properly set pricing.
2. If the free vend key switch option is used, all current prices will be overridden and the word “FrEE” will be displayed during the greeting.
3. Replacement vendors will not be for sale. (It will be the same on replacement boards)

Single Price Operation: If <enter> is pressed when the display shows “PriC” the controller will enter the price setting mode. The display will flash “S.Pri” then the current single price setting (as in fifty cents .50). This will be the single price viewing level.

If <enter> is pressed again, the display will show the current single price only. If <up> is pressed/held, the price will raise in .05 increments. If <down> is Pressed/held, the price will lower in .05 increments.

Pressing <home> anytime during this operation will automatically lock in the current price setting and take you to the “single price viewing level” showing you “S.Pri” then the vend price. Pressing it again will return you to the code level (display shows “PriC”).

Multiple Price Operation: If <enter> is pressed when the display shows “PriC” the controller will enter the price setting mode. The display will flash “ALL” followed by the current majority price setting.

If <enter> is pressed at this point, the display will steadily show the current majority price. Press <up> to increase the price value or <down> to lower it. If <home> is pressed at this level, the display will revert to the “multi-price viewing level” (display flashes ALL then the “majority vend price”). You may now set a few, all or different individual prices if desired.

If <up> or <down> is pressed when the display is flashes “ALL” followed by the current majority price setting, the display will cycle through the individual price settings for each
selection. The display will show the selection number followed by the price for that selection.
Example: If selection 1 is set at fifty cents the display would flash “P 1” followed by “.50”.

Pressing <center> while a individual selection is being displayed will cause the display to
steadily show the vend price for that selection to allow a change to that selection. Press <up> to
increase the price value or <down> to lower it. If <home> is pressed at this level, the display
will revert to the “multi-line viewing level” (display flashes ALL then the “majority vend
price”). Pressing <home> while at the “majority price viewing level” will return you to the code
level (display shows “PriC”).

Pressing select button #2 will take you to “SALE”
Pressing select button #1 will take you to...

SPACE TO SALES

**Description:** The space to sales setting mode is a very important part of programming. It
will determine what column will vend (what product will dispense) upon pressing a particular
select button. You will use this mode to program column assignments by assigning a column (or
columns) to each select button that you desire to use.

You may also decrease the number of the vendor selections. Example: Your vendor has
a total of nine select buttons on the front panel. If you wish, you may program the controller to
only use 8, 7 or 6 selections or even less. This is done by assigning all additional columns to one
of the selections used, then blocking off the unused selections with a cover plate. This will come
handy if a fewer total number of flavors are needed than the amount of select buttons on the
front panel. A benefit to doing this is that you will be allowed to allocate the “extra” columns to a
“faster moving” flavor. Space to sales are factory set for your type of vendor. Upon entering
the space to sales mode two different types of settings are available:

- **Factory Standard Space To Sales:** The factory standard setting will allow you to
  quickly configure one of twelve types of factory settings. When choosing one of these, each
column will automatically be assigned to its predetermined selection. You will have the option
to program the same number of columns as buttons (Example: 9 selections, 9 columns = 9-9).
You may program one less selection than the number of columns, which will always allow
selection 1 to sequence vends between columns 1 and 2 (Example: nine selections, ten columns =
9-10).

- **User Defined Space To Sales:** You will be allowed to assign any column to any selection.
User beware, you will also be allowed to program double assigned columns (one column to more
than one select button) or leave some columns unassigned. Both of these types of column
assignments are not advised but sometimes unavoidable. If either of the two is done, an error
code will be shown on the L.E.D. display upon door opening (see Chapter 5 for Reading errors).

<table>
<thead>
<tr>
<th>Selection-Column</th>
<th>Meaning</th>
</tr>
</thead>
</table>
| 0-0              | This is used to reset space to sales, “clear the
                  | slate” for custom settings. Do not <center> here
                  | unless using custom space to sales. |
| 5-5              | 5 selections, 5 columns |
| 5-6              | 5 selections, 6 columns with sequencing |
| 6-6              | 6 selections, 6 columns |
| 6-7              | 6 selections, 7 columns with sequencing |
| 7-7              | 7 selections, 7 columns |
| 7-8              | 7 selections, 8 columns with sequencing |
| 8-8              | 8 selections, 8 columns |
| 8-9              | 8 selections, 9 columns with sequencing |
| 9-9              | 9 selections, 9 columns |
| 9-10             | 9 selections, 10 columns with sequencing |
| 10-10            | 10 selections, 10 columns |
| CSsS             | Custom Space To Sales |
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Operation: If <enter> is pressed when the display shows “StoS” the controller will enter the space to sales setting mode. The controller will always enter at 0-0 no matter what the current setting. This will be the start of the space to sales setting list.

IMPORTANT NOTE (Revisions 11.03 and higher only): If <enter> is pressed when the display shows “StoS” the controller will enter the space to sales setting mode. The controller will always enter at the current space to sales setting... Not 0-0. If your vendor is programmed for custom space to sales or if programmed with a hand held computer you will enter at “CStS”.

If <up> or <down> is pressed at this point you will be allowed to cycle through all 13 space to sales settings.

Factory Standard Settings: Pressing <enter> at any factory standard setting will “lock in” (reprogram the control board) for that particular space to sales setting. Upon doing this, the display will automatically start sequencing through all selections and the columns that are assigned to each. Example: After entering a factory standard setting the display flashes “SL 1”, then flashes “1”, then flashes “2”. Selection one has assigned to it, columns 1 and 2 only. This will occur for each selection.

Custom Space to Sales Settings: Pressing <enter> at “CStS” will allow you to enter the Custom Space To Sales mode. Upon entering this mode the display will always start by flashing “SL 1” (selection 1) followed by flashing each column number that is assigned to that selection. Example: The display flashes “SL 1”, then flashes “1”, then flashes “2”. Selection one has columns 1 and 2 only assigned to it.

Choosing Selections

Pressing <up> or <down> at this point will allow you to cycle through selections 1 through 10, each selection showing the columns that are assigned to it.

Adding and Subtracting Columns From the Chosen Selection

If <enter> is pressed at a selection the display will show “Co 1”. This stands for column 1 for that particular selection. Pressing <up> or <down> at this point will allow you to cycle through columns 1 through 10 for the selection that was entered. If any column is flashing, this means that it is assigned to the selection. If any column is not flashing then it is not assigned to the selection. Pressing <enter> will change a columns condition. This will allow you to assign or unassign columns.

Exiting Custom Space to Sales

If no changes are made, pressing <home> will return you to the space to sales setting list at “CStS”. If a change to a selection is made, pressing <home> will return you to the selection level where the display flashes the selection number and the columns which are assigned to that selection. Note: Anything done in this mode will override any previous factory standard or custom settings.

* Follow the above process for all selections in which you wish to set. Then...

When finished, pressing <home> will return you to code level (display shows “StoS”)

Pressing select button #2 will take you to “PriC”
Pressing select button #1 will take you to...

Table: CONFIGURATIONS

Description: The Configurations mode is used to set vendor options dealing with pricing, acceptance, payback and a few other optional features. Although most of the features are strictly optional, the pricing configuration which allows you to set a single or multi-price is necessary to check before setting prices. This can be done by watching the display when the door is closed and it shows a greeting.

Reading the configurations mode: While in the configurations mode the display will show the configuration followed by the current setting. If the display shows “C 1 0” this means that configuration 1 is currently set to 0. In other words, the vendor is set for single pricing.
### Configuration and Meaning

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>C 0</td>
<td>0 = Single pricing. 1 = Multi-pricing.</td>
</tr>
<tr>
<td>C 5</td>
<td>0 = No reset on individual counts. (Allows external clear.) 1 = Reset on individual counts.</td>
</tr>
<tr>
<td>C 6</td>
<td>0 = Credit will be returned if proper change can’t be made. 1 = Allow vend regardless of changer tube levels (Proper change may not be paid back).</td>
</tr>
<tr>
<td>C 7</td>
<td>0 = Will only accept a bill if the coin tubes have enough coins to cover the difference between the bill value and the maximum vend price. 1 = Allows bill acceptance regardless of payout availability.</td>
</tr>
<tr>
<td>C 8</td>
<td>0 = Forced attempt (will not act as a bill changer). 1 = Escrow to vend (will allow change for a bill).</td>
</tr>
<tr>
<td>C 9</td>
<td>0 = Change is automatically returned to customer after a valid vend. 1 = Will hold the customers change in escrow to allow a multiple purchase.</td>
</tr>
<tr>
<td>C 10</td>
<td>0 = no “USE Coin Only” message. 1 = Display “USE Coin Only” message during greeting.</td>
</tr>
</tbody>
</table>

**IMPORTANT NOTE:** Configuration 1 comes factory set to “1” all others are set to “0”.

**Operation:** If <enter> is pressed when the display shows “Con” the controller will enter the configurations mode. The display will show configuration 1 and its setting (as listed in the configurations description). If <up> or <down> is pressed at this point the display will cycle through each configuration. Pressing <enter> while the display shows a configuration will allow that current configuration setting to start flashing. Pressing <up> or <down> while the current configuration setting is flashing will allow you to change that configuration setting. If changes are made to a configuration, pressing <home> will return you to the configuration list level. Follow the above process for all configurations in which you wish to set. When done pressing <home> will return you to code level (display shows “Con”).

Pressing select button #2 will take you to “StoS”
Pressing select button #1 will take you to...

### Selection Depth

**Description:** Since the vend motors on a Merlin III vendor do not havecams nor switches, programming selection depth is necessary. On older style “Electro-Mechanical” vendors it was necessary to adjust the vend timing cam by either filling notches or rotating part of the cam to change the vending depth.

The selection depth mode is used to program the depth in which a package is loaded in each column for that selection. If you are vending double (2) deep cans from selection one (columns 1 and 2) and you convert it to vend single (1) deep bottles, you will have to change selection one’s “selection depth setting” to 1 (single deep). In doing this, columns 1 and 2 will be set for single (1) deep. Upon entering the depth mode, you will have two options:

1. “All” depth setting - You have the option to set all depths the same.
2. Individual depth setting - You have the option to set all depths individually for each selection.

**Operation:** If <enter> is pressed when the display shows “SdEP” the controller will enter the selection depth setting mode at the selection level and the display will show “ALL”. From this point, two types of settings are possible:
"All" setting

If <enter> is pressed when the display shows "ALL", the control board will enter the ALL depth setting mode. The display will steadily show "ALL" and flash the current depth setting. Pressing <up> or <down> will allow you to change the flashing depth setting. Range: 1, 2, or 3. Pressing <home> will return you to the selection level and the display will show "ALL". At this time you will be able to cycle through each selection, to set individual selection depths. Pressing <home> from the selection level (display shows "ALL") will return you to the code level (display shows "SdEP").

Individual setting

If <up> or <down> is pressed when the display shows "ALL", the controller will cycle through each selection showing the selection number and the current setting for that selection. Example: If the display shows "d 3 3" = Selection 3 is currently set at 3 deep. If <enter> is pressed while the display is showing an individual selection depth setting, the current setting for that selection will start flashing. Pressing <up> or <down> will allow you to change the flashing depth setting. Setting Range: 1, 2, or 3. Pressing <home> will lock in your setting and return you to the selection level at the point where you entered it (at the selection just changed). At this time you will be able to cycle through each selection to set other individual selection depths (see below). Pressing <home> from the selection level (display shows "ALL") will return you to the code level (display shows "SdEP").

Pressing select button #2 will take you to "Con"
Pressing select button #1 will take you to...

DOUBLE COLUMNS

Description: Since the Merlin III control board can be used in a wide variety of different size vendors, it is necessary to program it to know what type of vendor that it’s in.

Of the vendors that are in use, there are different column configurations, using both wide and narrow columns. A wide column takes less "run time" to reload after dispensing a load of product (after a series of vend cycles) than a narrow column does. For instance, once a wide column vends the rear product on one side, it will continue to run to position the oscillator so that the next time a customer vends from this column, the vend will occur immediately. The narrow column rotor, upon vending the rear product, must rotate completely (almost 360°) around to reload and prepare for the next vend.

Note: The double column setting ranges from 0 to 10 and are factory set for your size of vendor. Replacement boards will be set for "4"

Operation: If <enter> is pressed when the display shows "ducb" the controller will enter the double column (wide column) setting mode and the display will show "dc" then flash the current double column setting. Pressing <up> or <down> will allow you to change the flashing double column setting from 0 to 10. Pressing <home> any time during the process will return you to the code level and the display will show "ducb".

Pressing select button #2 will take you to "SdEP"
Pressing select button #1 will take you to...

SET TIMER CONTROLLED SELECTIONS

Description: This mode is used to choose the selections to turn off either using the "built in" timer or with the optional key switch kit. This mode must be set to enable one or all of the selections for the timer or the key switch to operate.

Reading the set timer controlled selections mode - This mode will allow you to set all selections to operate with the timer by using the "ALL" setting. It will also allow you to set individual selections. Example: If the display shows "t 4 1", this means that selection 4 is set to operate with the timer or key switch.

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### Setting

<table>
<thead>
<tr>
<th>Setting</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Off, will not operate off of the timer or key switch</td>
</tr>
<tr>
<td>1</td>
<td>On, will operate off of the timer or key switch</td>
</tr>
</tbody>
</table>

**Operation:** If `<enter>` is pressed when the display shows “StCL”, the controller will enter the set timer controlled selections mode, at the selection level and the display will show “ALL”. From this point, two types of settings are possible:

**“All” setting**

If `<enter>` is pressed when the display shows “ALL and the current setting” the control board will enter the ALL setting mode. The display will steadily show “ALL” and flash the current “StCL” setting. Pressing `<up>` or `<down>` will allow you to change the flashing setting to 0 or 1. Pressing `<home>` any time during this process will return you to the selection level and the display will show “ALL and current setting”. At this time you will be able to cycle through each selection to set individual settings (Listed next) when finished with all selections, pressing `<home>` from the selection level (display shows “ALL and current setting”) will return you to the code level (display shows “StCL”).

**Individual setting**

If `<up>` or `<down>` is pressed when the display shows “ALL and the current setting” the controller will cycle through each selection showing the selection number and the current setting for that selection. Example: If the display shows “3 1” = For selection 3, the timer is set to on. If `<enter>` is pressed while the display is showing an individual selection timer setting, the current setting for that selection will start flashing. Pressing `<up>` or `<down>` will allow you to change the flashing timer setting to 0 or 1. Pressing `<home>` will lock in your setting and return you to the selection level at the point where you entered it (at the selection just changed). At this time you will be able to cycle through each selection to set other individual timer controlled selection settings (see below). Pressing `<home>` from the selection level (display shows “ALL and current setting”) will return you to the code level (display shows “StCL”).

Pressing select button #2 will take you to “dubc”
Pressing select button #1 will take you to...

### TIME AND TIMER SETTINGS

**Description:** The “tinE” mode is used mainly to turn selections, lighting and or refrigeration off and back on during pre determined times of the day and days of the week.

In the “tinE” mode you must set the current year, date, hour and the day of the week for the timer to operate. The “tinE” mode is also used to set each “on” and “off” time in which the timer will operate. Within the “tinE” mode there are 7 different functions which are listed below with their meanings.

<table>
<thead>
<tr>
<th>“tinE function”</th>
<th>Meaning</th>
<th>Display Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Set the current year</td>
<td>19.95</td>
</tr>
<tr>
<td>Date</td>
<td>Set the current month/day</td>
<td>03.28 = March 28</td>
</tr>
<tr>
<td>Hour</td>
<td>*Set the current hour/minute</td>
<td>14.31 = 2:31pm</td>
</tr>
<tr>
<td>StEP</td>
<td>Set the current day of week</td>
<td>tuE = Tuesday</td>
</tr>
<tr>
<td>StOP</td>
<td><strong>turn clock off</strong></td>
<td>“CLOC” then “StOP”</td>
</tr>
<tr>
<td>Day</td>
<td>Set timer “on” and “off” times</td>
<td>—</td>
</tr>
<tr>
<td>DSt</td>
<td>Display current time on L.E.D.</td>
<td>—</td>
</tr>
</tbody>
</table>

* Time is set using military time and shown in 12 hour time.
** StOP is used to turn the clock off when in storage to save the controllers battery

**Notes:**
1. Revisions 11.02 and less: does not recognize daylight savings time to automatically change the hour forward or back. All settings need to be done either manually or with a hand held computer
2. Revisions 11.03 and higher: Will recognize daylight savings time
3. The 11.02 Merlin III controller does not recognize leap year.
3. The timer's "on" and "off" time settings is when the timer will operate to control the selections, lighting or refrigeration system.
4. The "built-in" lithium battery shelf life (vendor unplugged):
   • 3 years with clock turned on
   • 10 years with clock turned off (done in the "StoP" mode)

Operation: If <enter> is pressed when the display shows "tinE" the controller will enter the time and timer settings mode and the display will show "yEar". Pressing <up> or <down> will allow you cycle through all 7 "tinE" functions. Pressing <home> while the display is showing any of the earlier listed "tinE functions" will return you to code level where the display shows "tinE".

******** SET YEAR

If <enter> is pressed when the display shows "yEar" the controller will enter the year setting "tinE function" and the display will show the current year, with the first two numbers of the year flashing (Example: 19.00). Pressing <up> or <down> will allow you to change the first two numbers of the year. If <enter> is pressed from this point, the first two numbers of the year will "lock in" and the second set of two digits will start flashing (Example: 19.95). Pressing <up> or <down> will allow you to change the second two numbers of the year. Pressing <home> any time during the process will return you to the beginning of the year "tinE function" where the display shows "yEar".

Pressing select button #2 will take you to "dSt"
Pressing select button #1 will take you to...

******** SET DATE

If <enter> is pressed when the display shows "datE" the controller will enter the date setting "tinE function" and the display will show the current date, with the first two numbers of the date flashing to indicate the month (Example: 03.00). Pressing <up> or <down> will allow you to change the first two numbers of the date. If <enter> is pressed from this point, the first two numbers of the date will "lock in" and the second set of two digits will start flashing to indicate the day (Example: 03.28). Pressing <up> or <down> will allow you to change the second two numbers of the date. Pressing <home> any time during the process will return you to the beginning of the date "tinE function" where the display shows "datE".

Pressing select button #2 will take you to "yEar"
Pressing select button #1 will take you to...

******** SET HOUR

If <enter> is pressed when the display shows "hour" the controller will enter the hour setting "tinE function" and the display will show the current hour in military time with the first two numbers of the hour flashing (Example: 14.00). Pressing <up> or <down> will allow you to change the hour. If <enter> is pressed from this point, the first two numbers of the hour will "lock in" and the second set of two digits will start flashing to indicate the minutes (Example: 14.31). Pressing <up> or <down> will allow you to change the second two numbers of the hour. Pressing <home> any time during the process will return you to the beginning of the hour "tinE function" where the display shows "hour".

Pressing select button #2 will take you to "datE"
Pressing select button #1 will take you to...
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SET DAY OF WEEK

If <enter> is pressed when the display shows “SEtd” the controller will enter the set day setting “tinEl function” and the display will start flashing the current day of the week. Pressing <up> or <down> will allow you to change the day of the week. To choose from you have:

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
</table>

Pressing <home> any time during the process will “lock in” your change and return you to the beginning of the set day “tinEl function” where the display shows “SEtd”.

Pressing select button #2 will take you to “hour”
Pressing select button #1 will take you to...

STOP CLOCK

If <enter> is pressed when the display shows “StOP” the controller will enter the stop clock setting “tinEl function” and the display will flash “CLOC” and “StOP” Pressing <enter> will turn off the clock to reserve the controllers “built in” battery. The display will flash “Off” and automatically exit back to the display of “StOP”. Pressing <home> any time during the process will return you to the beginning of the stop clock “tinEl function” where the display shows “StOP”.

Pressing select button #2 will take you to “SEtd”
Pressing select button #1 will take you to...

TIMER PROGRAMMING

If <enter> is pressed when the display shows “daY”, the controller will enter the “tinEl function” to allow you to set the timer on/off times for each day of the week. The display will show “ALL” and from this point you have two different options:

1. “ALL” setting - Allows you to simply set your on/off times to enable the timer to operate using the same times everyday.

2. Days of the week settings - Allows you to pick a select few days of the week in which you want the timer to operate (Example: Operation Monday through Friday only).

Pressing <up> or <down> will allow you to cycle from “ALL” to each day of the week.
If <enter> is pressed, either at “ALL” or at a week day, the controller will enter into that particular day and the display will show “SC-1” then “On” then the current first off time for selections (listed below at top of list). From here on this will be referred to as the timer setting mode “viewing only” level. If <up> or <down> is pressed at the timer setting mode “viewing only” level the display will cycle to all other available timer setting modes:

<table>
<thead>
<tr>
<th>Timer Setting Mode</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC-1 On</td>
<td>First off time for selections chosen in “StCL mode”.</td>
</tr>
<tr>
<td>SC-1 Off</td>
<td>First on time for selections chosen in “StCL mode”.</td>
</tr>
<tr>
<td>SC-2 On</td>
<td>Second off time for selections chosen in “StCL mode”.</td>
</tr>
<tr>
<td>SC-2 Off</td>
<td>Second on time for selections chosen in “StCL mode”.</td>
</tr>
<tr>
<td>FriG On</td>
<td>Time in which refrigeration system will shut off.</td>
</tr>
<tr>
<td>FriG Off</td>
<td>Time in which refrigeration system will come back on.</td>
</tr>
<tr>
<td>*LitE On</td>
<td>Time in which lighting system will shut off.</td>
</tr>
<tr>
<td>*LitE Off</td>
<td>Time in which lighting system will come back on.</td>
</tr>
</tbody>
</table>

* Must have the optional light relay kit for this feature to work.

To set “on” and “off” times for the timer you must press <enter> upon reaching the desired timer setting mode. Upon doing this the controller will enter into that particular timer setting mode and the display will show the current setting with the hour flashing. This indicates that the hour can now be changed. Pressing <up> or <down> will allow you to change the hour.
of this particular setting. Pressing <enter> will “lock in” the hour setting and start the minutes flashing, which will indicate to you that the minutes can now be changed. Pressing <up> or <down> will allow you to change the minutes of this setting.

Pressing <home> any time during the process will “lock in” your setting and bring you out to where the display shows the timer setting mode and the time set for that mode (timer setting mode “viewing only” level). At this point, <up> or <down> will allow you to access all timer setting modes listed earlier.

From this timer setting mode “viewing only” level, pressing <home> again will return you to the start of the “daY” mode where the display shows “daY”. Example: If you had just set the first off time for the selections to be eight O’clock AM, the display would flash “SC-1” then “ON” then “08.00”.

Notes: 1. If you are setting certain selections to go off and come back on at a programmed time, you must first enter “SC-1 On” to set the first off time for selections. When done programming the first off time you must then program the first return on time for the selections by entering into “SC-1 Off” and programming your “return on” time.

2. For the timer to be able to control the selections you must set the selections to be controlled in the “StCL” mode of the password protected menu.

Pressing select button #2 will take you to “StOP”
Pressing select button #1 will take you to...

**DISPLAY TIME**

If <enter> is pressed when the display shows “dSt” the controller will enter the display time setting mode and the display will show “dSt” and flash the current setting. Pressing <up> or <down> will allow you to change the flashing setting back and forth between 0 and 1.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Off, will not show current time on L.E.D. during greeting</td>
</tr>
<tr>
<td>1</td>
<td>On, will show current time on L.E.D. during greeting</td>
</tr>
</tbody>
</table>

Pressing <home> anytime during the process will return you to the start of the display time mode and the display will show “dSt”.

Pressing select button #2 will take you to “daY”
Pressing select button #1 will take you back to...”YEar”

When completely finished with all “tinE functions”, pressing <home> will return you to code level where the display shows “tinE”...

Pressing select button #2 will take you to “StCL”
Pressing select button #1 will take you to...

**REFRIGERATION PARAMETERS**

**Description:** The “FriG” mode is used to program the cut in and cut out temperatures of the unit, allows you to show the current “inside cabinet” temperature on the L.E.D. during the greeting, change the temperature from Fahrenheit to Celsius and test any controlling relays in the vendor (evap. fan, refrigeration, ballast and heater). There is even a setting to disable the unit for safety reasons. In the “FriG” mode there are 6 different functions which are listed below with their meanings.

<table>
<thead>
<tr>
<th>“FriG function”</th>
<th>Meaning</th>
<th>Display Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cuti</td>
<td>Set the cut in temperature</td>
<td>41F</td>
</tr>
<tr>
<td>Cuto</td>
<td>Set the cut out temperature</td>
<td>29F</td>
</tr>
<tr>
<td>dEG</td>
<td>*Set degrees (Fahrenheit or Celsius)</td>
<td>******</td>
</tr>
<tr>
<td>dsP</td>
<td>Show inside temperature on L.E.D.</td>
<td>******</td>
</tr>
<tr>
<td>FrG</td>
<td>Disables unit (safety feature)</td>
<td>******</td>
</tr>
<tr>
<td>rELY</td>
<td>Relay test mode</td>
<td>******</td>
</tr>
</tbody>
</table>

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* Temperature calculations will automatically be done and your cut in and cut out settings will also be in the form of temperature reading (Fahrenheit or Celsius).

**Operation:** If <enter> is pressed when the display shows “FriG” the controller will enter the refrigeration parameters mode and the display will show “Cuti”. Pressing <up> or <down> will allow you cycle through all 6 “FriG functions”. Pressing <home> while the display is showing any of the earlier listed “FriG functions” will return you to code level where the display shows “FriG”.

---

**CUT IN TEMPERATURE**

If <enter> is pressed when the display shows “Cuti” the controller will enter the Cut In setting “FriG function” and the display will show the current Cut In temperature setting (factory setting: 41F). Pressing <up> or <down> will allow you to change the Cut In setting.

<table>
<thead>
<tr>
<th>Range Fahrenheit</th>
<th>Range Celsius</th>
</tr>
</thead>
<tbody>
<tr>
<td>39°F to 45°F</td>
<td>4°C to 7°C</td>
</tr>
</tbody>
</table>

Pressing <home> any time during the process will return you to the beginning of the “Cuti” “FriG function” where the display shows “Cuti”.

Pressing select button #2 will take you to “rELY”

Pressing select button #1 will take you to...

---

**CUT OUT TEMPERATURE**

If <enter> is pressed when the display shows “Cuto” the controller will enter the Cut out setting “FriG function” and the display will show the current Cut out temperature setting (Factory setting: 29F). Pressing <up> or <down> will allow you to change the Cut out setting.

<table>
<thead>
<tr>
<th>Range Fahrenheit</th>
<th>Range Celsius</th>
</tr>
</thead>
<tbody>
<tr>
<td>24°F to 34°F</td>
<td>-4°C to 1°C</td>
</tr>
</tbody>
</table>

Pressing <home> any time during the process will return you to the beginning of the “Cuto” “FriG function” where the display shows “Cuto”.

Pressing select button #2 will take you to “Cuto”

Pressing select button #1 will take you to...

---

**CHANGE DEGREES**

If <enter> is pressed when the display shows “dEG” the controller will enter the degree setting “FriG function” and the display will show “dEG” and then flash the current degree setting. Pressing <up> or <down> will allow you to change the current setting

<table>
<thead>
<tr>
<th>Setting</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Fahrenheit (factory setting)</td>
</tr>
<tr>
<td>C</td>
<td>Celsius</td>
</tr>
</tbody>
</table>

Pressing <home> any time during the process will return you to the beginning of the “dEG” “FriG function” where the display shows “dEG”.

Pressing select button #2 will take you to “Cuto”

Pressing select button #1 will take you to...

---

**DISPLAY TEMPERATURE**

If <enter> is pressed when the display shows “dSP” the controller will enter the display temperature “FriG function” and the display will show “dSP” and then flash the current setting. Pressing <up> or <down> will allow you to change the current setting

<table>
<thead>
<tr>
<th>Setting</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Temp. will not be displayed on L.E.D. during greeting</td>
</tr>
<tr>
<td>1</td>
<td>Temp. will be displayed on L.E.D. during greeting</td>
</tr>
</tbody>
</table>
Pressing <home> any time during the process will return you to the beginning of the “dSP” “FriG” function where the display shows “dSP”.

Pressing select button #2 will take you to “dEG”
Pressing select button #1 will take you to...

MASTER REFRIGERATION CONTROL

If <enter> is pressed when the display shows “FrG” the controller will enter the Unit Disable “FrI G” function and the display will show “FrG” and then flash the current setting. Pressing <up> or <down> will allow you to change the current setting. FOR NORMAL OPERATION OF THE REFRIGERATION SYSTEM THIS SETTING MUST BE SET TO “1”.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Unit will NOT operate regardless of any settings</td>
</tr>
<tr>
<td>1</td>
<td>Unit will operate as normal off the cut in / cut out settings</td>
</tr>
</tbody>
</table>

Pressing <home> any time during the process will return you to the beginning of the “FrG” “FrI G” function where the display shows “FrG”.

Pressing select button #2 will take you to “dSP”
Pressing select button #1 will take you to...

RELAY TEST

If <enter> is pressed when the display shows “rELY” the controller will enter the “FrI G” function to allow you to test the various vendor relays. The display will show “Fan” which is the test mode for the optional evaporator fan motor relay. Pressing <up> or <down> will allow you to cycle through each relay test mode available.

<table>
<thead>
<tr>
<th>“rELY” test mode menu</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fan</td>
<td>To test optional evaporator fan relay</td>
</tr>
<tr>
<td>LitE</td>
<td>To test optional ballast (lighting) relay</td>
</tr>
<tr>
<td>Htr</td>
<td>To test the optional heater kit relay</td>
</tr>
<tr>
<td>CnPr</td>
<td>To test the equipped refrigeration relay</td>
</tr>
</tbody>
</table>

Pressing <enter> at any relay test mode will allow the control board to enter into that mode for relay testing. The control board will start flashing the name of the relay to be tested followed by “On”. If the relay is currently off and you wish to test the circuit by turning it on <enter> here. If <up> or <down> is pressed the display will flash the name of the relay and then flash off. If the relay is currently on and you wish to test the circuit by turning it off <enter> here. Pressing <home> from within any relay test mode (as if after a test), will allow you to return to the relay test mode menu where the display will show the name of the menu that you were just in. Pressing <home> from a point on the relay test mode menu will return you to the beginning of the relay mode where the display shows “rELY”.

When completely finished with all “FrI G functions”, pressing <home> will return you to code level where the display shows “FrI G”...

Pressing select button #2 will take you to “tInE”
Pressing select button #1 will take you to...

EXTERNAL PASSWORD

Description: With the “Merlin III” vendor you have the capability to access both overall and individual selection can counts externally. You will have the option to reset the individual can counts if desired. You will also be able to read vendor errors externally (errors can’t be cleared externally). The “PAS” mode gives you the option to change the external password to use any of your select buttons in a 4-digit combination or you may decide it best to use the factory setting of 4 - 2 - 3 - 1. If you do decide to set your own password and happen to forget it, just access this menu and the current password will be displayed.
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Notes:
1. Password numbers for use range from 0 to 9.
2. If your vendor only has seven selections you cannot use 8 or 9 or 0 in your password or you won't be able to enter the password.
3. To disable the external password: Set one of the four digits to “0” or a selection that is not available.

Operation:
If <enter> is pressed when the display shows “PAS” the controller will enter the external password setting mode and the display will show the current external password with the first number of the four (to extreme left of display) flashing. Pressing <up> or <down> will allow you to change the flashing digit. If <enter> is pressed the second number from the left will start flashing. By doing this you will lock in any changes made to the first digit and you will now be able to change the second digit. Follow the same process for every digit. If the fourth digit is flashing and <enter> is pressed you will return to the first digit again. Pressing <home> any time during the process will lock in your setting and return you to the code level and the display will show “PAS”.

Pressing select button #2 will take you to “FriG”
Pressing select button #1 will take you to “ErOr” (or “LaNg” if available)

INTERNATIONAL LANGUAGE (Revisions 10.03 and higher only)

Description:
The “Merlin III” vendor gives you the opportunity to set an international language of English, French, Spanish, Hebrew or German to show “hold” and “sold out”.

Operation: If <enter> is pressed when the display shows “LaNg” the controller will enter the International Language setting mode and the display will show the current language which is being used. Pressing <up> or <down> will allow you to change the language to one of the following:

Pressing <home> any time during the process will enter the language which is being displayed and return you to the code level. The display will show “LaNg”.

Pressing select button #2 will take you to “PAS”
Pressing select button #1 will take you to “ErOr”

The remaining modes have been previously described in the service menu section starting on page 26. These modes are added onto the end of the password protected menu for your convenience.

Errors Coin Payout Coin Tube Fill Vend Test Menu Return

External Menu

This section completely outlines all external Menu modes, including a description and operation for each. The external Menu was designed to give ready access to product vend counts, and vendor diagnostics. This may come in handy for a loader, service technician or even a third party operator to use which is not permitted to change vendor setup such as timer settings, space to sales or even prices. All of the vendor setup is done in the Password Protected Menu and cannot be accessed with the vendors door closed in normal operation.

The external password is established in the “PAS” mode of the password protected menu and is changeable (For more info. refer to the “PAS” section of this manual). The external password is factory set at 4 - 2 - 3 - 1. If the password is entered when the display is showing the greeting the display will show “SALE”. 
SALE COUNTER
Description: The sale counter mode is the same counter that is accessed through the password protected menu. It will allow you to manually extract the amount of product dispensed through your vendor (up to 99,999,999). The sale counter mode consists of a total count which is non-resettable and individual counts per selection which are resettable, depending upon the proper configuration setting (see configurations). The counts may possibly be displayed in up to two sets of 4 digits. Examples for both total and individual counters are as follows:
1. If the total product vended is 5,678,910. Upon entering the sale mode the display would flash “SALE”, followed by “567”, followed by “8910.”.
2. If the individual sale count for selection 1 is 678,910. Upon accessing the individual count for selection 1 the display would flash “SL 1”, followed by “67”, followed by “8910.”.

Clearing Individual Counters: If the configurations mode is set to allow the external individual counters to be reset, a clear mode (Clr) will appear within the external menu after reading a individual count.

Operation: If <enter> is pressed when the display shows “SALE” the controller will enter the sales counter mode and the display will flash “SALE” then the total amount of sales made by the vendor, possibly in two sets of 4 digits as shown in example 1 above. Using <up> or <down> will cycle through individual sale counts for each selection and the display will flash individual counts as shown in example 2 above. If <home> is pressed anytime during this operation, the controller will return to the code level (display shows “SALE”).
Pressing select button #2 will take you to “Rtn”
Pressing select button #1 will take you to...

CLEAR
Description: This mode will allow you to reset (clear) your resettable individual product counters for each selection. The “Clr” mode will only appear if configuration 5 is set to “0” in the configurations mode of the password protected menu (see configurations “Con” described earlier in this manual).

IMPORTANT NOTE: Doing this will reset both cash and sale individual counters which are within the password protected menu.

Operation: If <enter> is pressed when the display shows “Clr” the controller will enter the clear mode and automatically clear all individual product sale counters. The display will flash “Clr” and then show “Eror”. At this point the clear menu will be erased until a individual count is read again in the sale mode.
Pressing select button #2 from “Clr” will take you to “SALE”
Pressing select button #1 will take you to...

ERRORS
Description: This mode was designed to help diagnose vendor problems... Upon opening the vendors main door, L.E.D. will flash any possible errors (For a list refer to Chapter 5 “Reading Error Codes”). This external errors mode is designed to give you a detailed description of the same Errors as seen upon door opening. This external errors mode is for viewing only. Errors can not be cleared. If any errors are present it is recommended that you access this errors mode, get a detailed description of each error, take note of it by writing it down and then follow the necessary steps to correct the problem. Again, errors can not be cleared until the vendor’s main door is opened and some errors will require you to clear them from within the internal “Eror” mode.

Operation: If <enter> is pressed when the display shows “Eror” the controller will enter into the errors descriptive display mode. At this point, the display will show any and all current vendor errors first followed by the descriptive. If no errors exist “none” will appear on the
display. If <home> is pressed anytime during this operation, the controller will return to the beginning code level (display shows "Error").

Note: Errors cannot be cleared in the external "Error" mode but only in the "Error" mode within the service or password protected menus.

Pressing select button #2 will take you to “SALE” or “CL1”
Pressing select button #1 will take you to...

**RETURN**

By pressing the control boards mode button, the display will show “rtn”. If <enter> is pressed when the display shows “rtn” the controller will revert to a sales mode and the greeting will be displayed.

Pressing select button #2 will take you to “Error”
Pressing select button #1 will take you to “SALE”

**Programming Procedures**

This section was designed to give you an idea of where to start as you begin to program your vendor for the first time. As you gain more experience programming your Merlin III vendor you may find faster and better ways of programming. As you start to program your vendor it is best to have a idea of how you want to program it. Ask yourself the following questions.

1. How many selections will I use? (How many flavors do I want?) The more flavors, the more you cut down the capacity per flavor.
2. Of the columns inside my vendor, what flavors do I want to load in what columns?
   Make good use of the wide and narrow columns to maximize space to sales.
3. Do I want to go with a custom space to sales setting or a quick “factory set” similar button to column configurations, as conventional electro-mechanical (regular) vendors from the past?
4. Is the vendor going to be set for single or multi-pricing?
5. What is the vend price or prices?
6. Check my configurations list for any options that I may wish to use. (Refer to configurations, starting on page 31. List of, on page 32) Also at this time I must decide if I want to use the vendors “built in timer” to turn off/on selections etc.
7. Lastly, I must check the vendors depth and double column settings to assure that they’re set properly to avoid multiple vending. After answering all the questions you are ready to research in the manual and access the modes to set your vendor up.

Follow this order to help avoid problems during setup.

**Access**

Access the configuration mode described beginning on page 31. To get to the “Con” mode first open the vendors main door then press the controllers mode button. The display should show “rtn”.

You must enter the password protected menu to get to “Con”. Do this by:
- Press select button #2 (the display should show “PASS”)
- Press select button #3 and release (the display should go blank)
- Press select buttons #4 then #2 then #3 then #1.

The display should now show “CASH” and you will be in the password protected menu.
- Press select button #1 four times, the display should change to a different mode each time.

The display should now show “Con” and you will be at the configurations mode. Follow the instructions starting on page 31 to set each configuration. make sure to check each configuration to make sure each one is set appropriately.
IMPORTANT NOTE: when finished in "Con" you must come back out of the mode to where
the display shows "Con" for the following procedures to be effective.

The next step to setting your vendor up is to set the space to sales. To get to the space
to sales mode from configurations mode where the display shows "Con":
- Press select button #2 (the display should now show "StoS")
- Press select button #3 and release (the display should show 0-0)

You are entered into the space to sales mode. Follow the instructions on page 30 to set
your space to sales.

IMPORTANT NOTE: when finished in "StoS" you must come back out of the mode to where
the display shows "StoS" for the following procedures to be effective.

The last step to quick vendor set up is to set the pricing. To get to the pricing mode
from where the display shows "StoS":
- Press select button #2 (the display should show "Pric")
- Press select button #3 and release (you will enter the "Pric" mode)

You are now at the set price mode. Follow the instructions on page 29 to set your vend
price (s).