HYDRO quick start guide

Connected Total Eclipse Controller

Safety Precautions

WARNING! Please read precautions thoroughly before operation. Meet all applicable local codes and regulations.

THANK YOU FOR YOUR INTEREST IN OUR PRODUCTS

Please use this equipment carefully and observe all warnings and cautions.

WEAR	protective clothing and eyewear when dispensing chemicals or other materials or when working in the vicinity of all chemicals, filling or emptying equipment, or changing metering tips.
ALWAYS	observe safety and handling instructions of the chemical manufacturer. direct discharge away from you or other persons or into approved containers. dispense cleaners and chemicals in accordance with manufacturer's instructions. Exercise CAUTION when maintaining your equipment. reassemble equipment according to instruction procedures. Be sure all components are firmly screwed or latched into position.
KEEP	equipment clean to maintain proper operation.

introduction

System Components

1) Connected Total Eclipse Controller, Gray

2) Ethernet Cable Splitter and Terminator

3) Controller Interface Cable

4) Cable from Controller to Gateway

5) Cellular Gateway, SIM Card (factory installed), and RS485 Interface

The actual components delivered will depend on the configuration of the system ordered. The Connected Total Eclipse Controller can be connected to various Hydro laundry dispensers and communicates data to Hydro Connect via manual uploads or in real-time with a cellular gateway. The system may also include:

- Machine Interface – Accepts washer signals and converts them to safe, low-voltage inputs.
- Product Dispenser – Provides product transfer to the wash machine.
- Flush Manifold (optional) – Available for water flush chemical transfer applications.

The Connected Total Eclipse Controller is compatible with most Hydro laundry dispensers, and supports two modes of operation; **Standard** mode and **Pump Mapping** mode

WARNING!
Connected Total Eclipse Controller Systems are intended to be installed by experienced installers, in accordance with all applicable electrical and plumbing codes.

NOTE: Always use proper lockout or tagout procedures when servicing the dispenser.

CAUTION!
This manual was written and illustrated to present the basic installation, operation and servicing instructions of the Connected Total Eclipse Controller. Guidelines are suggested in reference to the preferred method of installation, but the variety of equipment and the surrounding environment will dictate the actual installation of the Connected Total Eclipse Controller.

installation summary

Below is a summary of the key steps for the successful installation of a Connected TE controller and Gateway. Details of the installation are presented in subsequent sections.

1) Physical Installation

a) Gateway installation & location

- Check for good cell signal using a cellular signal strength indicator.
- 120VAC locate gateway near an or 240VAC power outlet (depending on gateway model) within 5 feet or 1.5 meter power gateway.
- Mount gateway to wall.
- Install the 2 antennas in the locations shown in the gateway installation details.
- Confirm gateway signal is Excellent or Good on the gateway LTE cellular signal strength LED's.
- Plug RS485 Interface Board into COM 2 on the gateway and secure using the two screws.

b) Route supplied network communications cable from Gateway to splitter for Connected TE 1

- Route the cable efficiently to Controller 1 / Address 1.

c) Setup Connected TE Controllers

- Connect splitters to each Controller.
- Connect Controller 1 / Address 1 splitter to the gateway cable.
- Daisy-chain remaining Controllers and splitters with interface cables (see page 5).
- Install terminator in open port of last splitter.
- Install and route J1 and J2 cables from the Dispenser and to the Machine Interface respectively.

2) Configure Connected TE

a) Power Up TE via dispenser.

b) Enter Language.

c) Enter Date & Time.
Note: If using multiple Connected TE controllers, each must have the same Date & Time setting.

d) Upload setup file from the USB created if using the Formula Editor.

e) Go to Installer Menu – Initial System Setup
Note: These steps must be followed for a Connected TE to operate properly and produce accurate real-time reports.

- Address – Set the address (1, 2, 3 or 4) which **must** be unique for each Connected TE controller.
  NOTE: An address of **zero** (0) must be set when there is no gateway connected.
- Account Name – Confirm or create.
- Company Name – Confirm or create.
- Machine Name – Confirm or create.
- Date - Confirm.
- Time - Confirm.
- Timezone - Confirm or select.
- Daylight Savings Time - If a gateway is used, ignore this field.
  - If an address of zero (0) is used (no gateway), then enable or disable as appropriate in a daylight savings time zone.

3) Prime and Calibrate each Product

Note: All products must be primed and calibrated for the system to operate

4) Final Checkout Steps

a) Recheck all connections and cables to ensure they are properly attached.

b) Make sure all formulas have a default load weight entered so that reporting remains accurate.

c) Verify the Connectivity Heartbeat for each TE controller to ensure polling communications from the gateway. (See the Home Screen explanation on page 10).

d) Configure the squeeze tube change date and the number of days for each product.

e) Configure the product costs for each product so that cost reporting in Hydro Connect is populated.

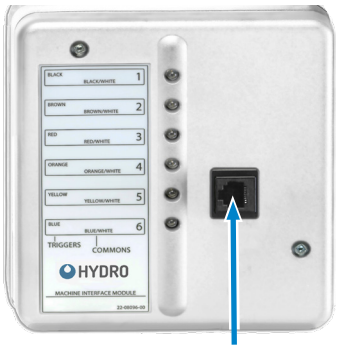
installation details

Machine Interface Installation

1) Route MI signal wires through knock-out on washer within the wiring area (approximately 3/4 inch or 20mm). Use lock nut on MI nipple to secure MI to washer.

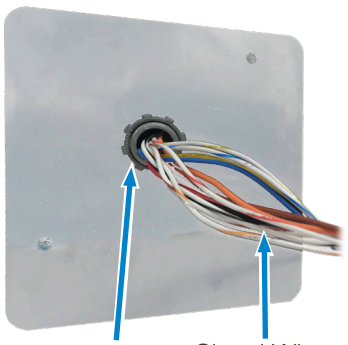
Machine Interface (MI)

Front



J2 Cable Connection

Rear



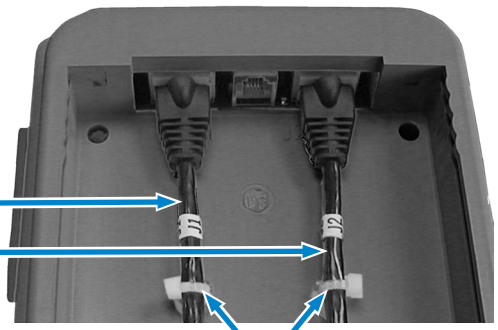
Lock Nut Signal Wires

2) Connect cable marked J2 into Machine Interface. Bundle excess J2 cable outside washer and connect other end to the connector labeled J2 on the rear of the Controller.

3) Connect cable marked J1 from the dispenser module to the connector labeled J1 on the Controller.

4) For additional cable strain relief, secure J1 and J2 cables to controller tie-down posts with cable ties (aka tie wraps, zip ties).

Connected Total Eclipse Controller (rear)



WARNING! The Connected Total Eclipse controller is intended to be installed by a qualified technician only, in accordance with all applicable electrical and plumbing codes.

DISCONNECT POWER to the laundry machine and dispenser during installation and/or any time the dispenser cabinet is opened.

WARNING! Keep the Machine Interface and the communication cables away from high voltage wires and relays. NEVER run the J1 and J2 cables parallel with high voltage lines.

NOTE: This manual describes only the installation and programming of the Connected Total Eclipse Controller, which is a portion of the larger Chemical Management System. Please refer to the reference manual included with your dispenser or upgrade kit for additional instructions.

Electrical wiring connections for supply triggers are to be done inside the supply junction box. (See section 3.03 “Supply Trigger Wiring” on page 17 for detailed connection information.)

NOTE: The maximum distance for the J1 cable from the product dispenser to the controller is 75 feet or 22 meters.

- “J” cables are available in 15 and 30 foot lengths (4.5m and 9m). A coupler is available to join cables together for longer distances, but thy must always be under 75 feet or 22 meters.
- “J” cable runs longer than 75 feet or 22 meters require the use of break out boxes and hard wiring. Contact Hydro Systems for details.

Signal Wire Installation

The Machine Interface will work with any signal voltage between 24 – 240VAC or 22 – 24VDC. With DC signals, polarity must be observed, where common connects to negative. The signals must be positive voltages.

Supply Trigger Wiring:

1) Identify the washer supply signals. Check with technical service or with the washer manufacturer if you are not sure of the connections.

2) Identify the Mode of Operation to be used. Use appropriate terminal connectors to connect the signal wires to the Machine Interface wires, based upon the table on the next page.

WARNING! Always verify all voltage sources with a voltage meter.

DISCONNECT POWER to the laundry machine and dispenser during installation and/or any time the dispenser cabinet is opened.

installation details (continued)

Supply Trigger Wiring

Supply Trigger Wiring by Operation Mode

			Connect by Operating Mode to:	
Trigger	**Supply Signal**	**Signal Common**	**Standard**	**Pump Mapping**
Signal 1	Black Wire	White & Black Wire	Product 1	Prewash
Signal 2	Brown Wire	White & Brown Wire	Product 2	AFS
Signal 3	Red Wire	White & Red Wire	Product 3	Mainwash (2H/2C)
Signal 4	Orange Wire	White & Orange Wire	Product 4	Mainwash (2H/2C)
Signal 5	Yellow Wire	White & Yellow Wire	Product 5	Spare
Signal 6	Blue Wire	White & Blue Wire	Product 6	Final Rinse

Trigger Signal Wiring Notes

- If one or more product signals are not used, they do not need to be connected.
- If you are triggering more than one product from a single signal, connect all of the Machine Interface signal wires for those products to that signal.
- Protect any unused wire with a wire nut or an insulated connector. If the washer has only a single common, connect all the common wires together.
- One of the 6 LEDs on the Machine Interface will light up when the corresponding valid signal is received.

Cellular Gateway Installation

One cellular gateway is needed for up to four Connected Total Eclipse controllers, for real-time connectivity. To install the cellular gateway follow the steps below:

1) Using a cellular signal strength indicator or the powered gateway (120 or 240 VAC depending on the model) determine a suitable mounting location for the gateway that is close to the washers and dispensers (standard cable length is 50 feet or 15 meters, but this cable can be as long as 400 feet or 125 meters) and has adequate cellular signal. Hydro's recommendation is that the gateway have a good or excellent connection to minimize outages or data loss (see LED table on next page).

2) The gateway can be physically mounted using either the included DIN Rail kit or a third-party enclosure (not included).

DIN Rail: The aluminum DIN-rail attachment plate is already attached to the product's casing. To mount the UC-3100 gateway on to a DIN rail, perform the following steps.

a) Pull down the bottom slider of the DIN-rail bracket located at the back of the unit. (Down is toward the power connection).

b) Insert the top of the DIN rail into the slot just below the upper hook of the DIN-rail bracket.

c) Latch the unit firmly on to the DIN rail.

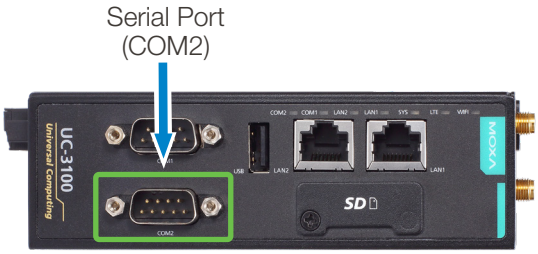
d) Once the gateway is mounted properly, you will hear a click and the slider will rebound back into place automatically. The two antenna connectors should be facing upward when mounted correctly.

3.00 installation (continued)

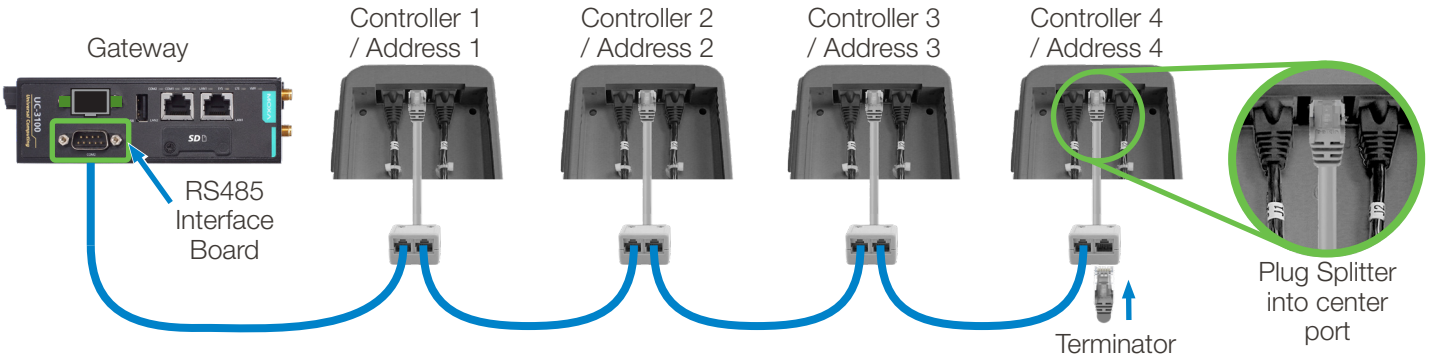
Cellular Gateway Installation (continued)

3) Connect the interface board (included in the gateway package) to the Serial Port labeled COM2.

This RS485 interface board may be installed on up to four Connected TE controllers to establish communications with the gateway.



4) Using the provided interface cables (1 per Connected TE), daisy chain each cable splitter and Connected TE together, as shown below. The splitter closest to the gateway would be connected to the gateway interface board via the long interface cable (provided with the gateway). The splitter furthest from the gateway should have its open port plugged with the provided terminator.



5) Install the two Cellular Antennas by screwing them onto the threaded ports **C1** and **C2** as indicated. When installed correctly, the antennas should be facing upwards.

NOTE: Both antennas MUST be connected.

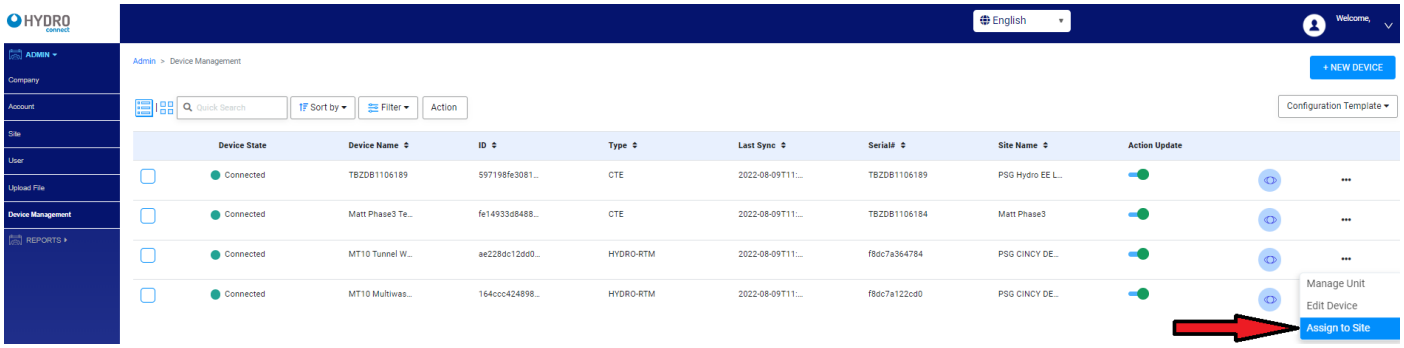
6) Connect the power jack (included in the gateway package) to the gateway UC-3100's DC terminal block (located as shown to the right), and then connect the power adapter.

It takes several seconds for the system to bootup. Once the system is ready, the SYS LED will light up green.

7) With everything connected, ensure that the SYS LED illuminates green (see table to right) and the LTE Cellular signal strength LEDs are denoting Good or Excellent.

LED Name	Status	Function	Notes
SYS	Green	Power is on	
	Red	No signal	
	Off	Power is off	
LAN1/ LAN2	Green	10/100 Mbps Ethernet mode	
	Off	Ethernet port is not active	
COM1/ COM2/ CAN1	Orange	Serial/CAN port is transmitting or receiving data	
	Off	Serial/CAN port is not active	
Wi-Fi	Green	Wi-Fi connection has been established	**Client mode**: 3 levels with signal strength 1 LED is on: Poor signal quality 2 LEDs are on: Good signal quality All 3 LEDs are on: Excellent signal quality
			AP mode: All 3 LEDs blinking at the same time
	Off	Wi-Fi interface is not active	
LTE	Green	Cellular connection has been established	3 levels with signal strength 1 LED is on: Poor signal quality 2 LEDs are on: Good signal quality All 3 LEDs are on: Excellent signal quality
	Off	Cellular interface is not active	

8) Before streaming data, check in Hydro Connect to confirm that the gateway is assigned to the correct site. If it is not,contact the chemical company or Hydro admin.



To confirm site, navigate to Device Management and Click on Assign to Site

installation details (continued)

Connected Total Eclipse Controller Mounting

The Connected Total Eclipse controller may be mounted either horizontally (such as on top of the washer) or vertically (such as on the front of the washer).

Mount the unit using the self-adhesive strips provided, or for added security, you may use nuts and Allen bolts or other fasteners (provided) as is appropriate to the mounting surface.

1) Position the controller for easy access to the keypad and display screen.

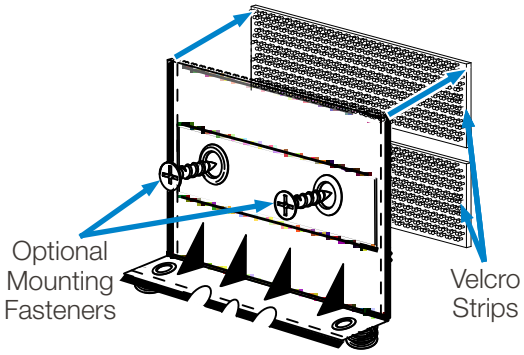
2) Mark a mounting location that is on, or close to, the washer. The mounting surface must be clean and dry.

3) Join the four Velcro-style strips firmly together to form two pair.

4) Peel backing from one strip of each pair and place, adhesive-side down, in each recess on the mounting bracket. Press firmly for good adhesion.

5) Peel backing from opposite strips and press mounting bracket onto smooth, clean surface (use alcohol wipe, if needed) at marked location.

6) With cables connected, slide controller front down onto mounting bracket (controller back), guiding cables into slots and pressing down firmly until front and back snap into place.



Wall Mount Bracket

initial controller setup

Set Operating Language

After all electrical, plumbing, and mechanical installation is complete, apply power to the Connected Total Eclipse Controller.

At the first power up, the LANGUAGE menu follows the splash screen to allow menu language selection.

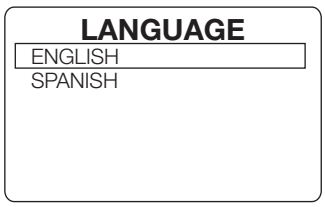
Choose one of the menu languages that are pre-installed in each controller (English or Spanish for the Americas; English or German in the EU]; or download additional Connected Total Eclipse Controller menu language files from the Hydro Systems' website to a USB flash drive.

Installing a language from a USB flash drive to a controller can only replace the non-English menu language in the controller as the English language option is permanently installed.

1) Move the selection box, using the Up / Down arrow keys, ▲ ▼ until it frames your desired language (US controller defaults shown below).

(Optional) To replace the non-English language with a different language connect a USB flash drive containing the downloaded languages to USB port "A" (the lower USB port on the controller's right side). Available languages will appear for selection.

2) Press the Enter key ↵ to select the operating language and launch the DATE & TIME menu.



US Default Language Menu

With USB Language Drive

initial controller setup (continued)

Setting the Date, Time and Time Zone

After setting the operating language on the first power-up from the factory, or whenever the controller is powered up afterward, the DATE & TIME menu is displayed.

When installing the controller, you **must** change the Date, Time, and Time Zone to match the installation location, as this controls the data contained in reports. **NOTE:** If using more than one Connected Total Eclipse Controller with the cellular gateway, ensure all the dates and times are similar.

The display is in ISO 8601 standard format: **YYYY-MM-DD HH:MM** (Year-Month-Day Hour: Minute). The clock is a 24-hour clock, with no AM/PM setting.

After doing this, user will also need to set the time zone so that the reports in Hydro Connect display the correct time. There are nine pre-configured time zones, with the ability to set a custom time zone offset to the UTC time (-12 hours to +14 hours).

Once set, the date and time (real-time clock) are retained by battery power if the main power is turned off or if there is a power failure.

Setting the Date and Time:

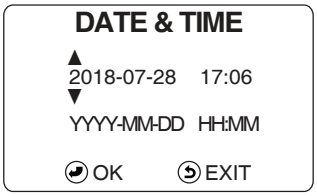
1) The first number of the year is selected as the active digit, indicated by the double-arrow cursor.

2) You can change the value of the active digit by pressing the Up / Down arrow keys.

3) To move to the next digit, press the Right arrow key. To backspace, press the Left arrow key.

4) When the correct date and time are displayed, press the Enter key to save the settings and launch the Total Eclipse Home Screen (see section “Home Screen” on page 10 for more information).

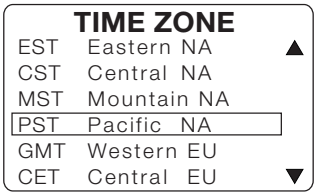
Note: To exit the Date & Time menu without saving changes and move to the Home Screen, press the Exit key. Also, the display will automatically exit the Date & Time menu if no keys are pressed for 15 seconds, without saving changes.

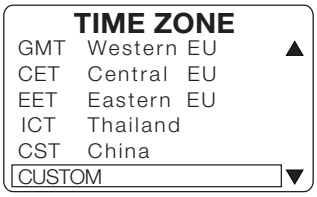


Setting the Time Zone:

1) Select the time zone that reflects the area of the world of the installation. There are 9 preset time zones with an offset from Universal Time Coordinated (UTC). If the time zone is not listed, a custom offset can be entered. The time zones are:

- Eastern NA (-5)
- Central NA (-6)
- Mountain NA (-7)
- Pacific NA (-8)
- Western EU (+0)
- Central EU (+1)
- Eastern EU (+2)
- Thailand (+7)
- China (+8)
- Custom (-12 to +14 adjustable)





2) When the correct time zone/offset is indicated, press the Enter key to save the setting.

initial controller setup (continued)

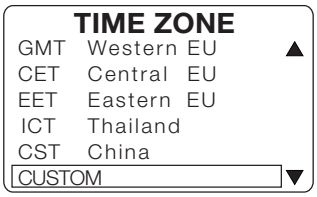
Setting the Date, Time and Time Zone (continued)

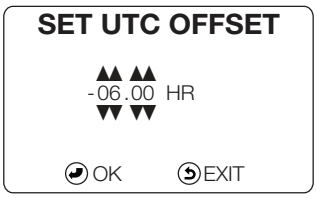
Setting the Time Zone: (continued)

3) If a custom time offset is needed select CUSTOM and press the Enter key.

4) Use the up/down buttons to set the offset at any value from -12.00 HR to +14.00 HR in 0.25 (15 minute) increments. The four sets of double-arrow cursors indicate that all digits will increase or decrease at the same time.

5) When the correct custom time zone/offset is complete, press the Enter key to save the setting.





controls

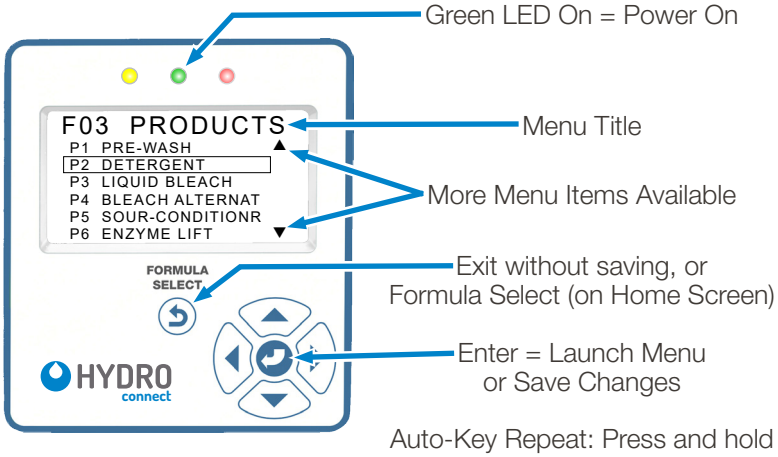
Overview

The Connected Total Eclipse Controller's back-lit screen displays seven lines of text, with on-screen prompts, in the operating language selected by the installer.

A green LED indicates power is on. The six-button keypad is used by the machine operator for formula selection and modification during normal operation; and by the installer during installation, service, and data transfer.

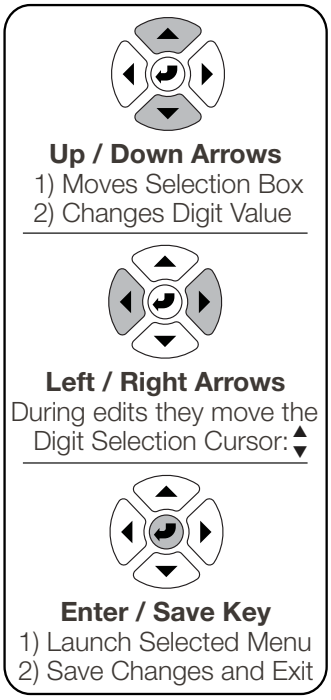
The USB port accepts a Type-A USB flash drive (8 GB or smaller). It is used to read and write formulas and settings between the flash drive and the controller. A USB flash drive can also be used to write Report files from the controller to the USB drive. These files can then be manually uploaded to Hydro Connect in cases where a cellular gateway and real-time streaming is not enabled.

Menu Navigation



NOTE: Press the Enter key to **save** your setting changes and return to a previous menu.

Press the Exit key to **cancel** changes without saving, and return to a previous menu.

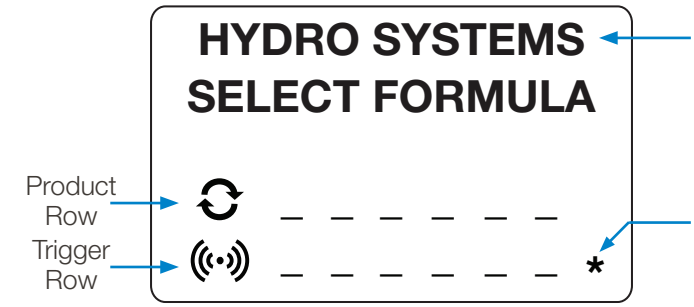


operator menus

Home Screen

The Home Screen appears after the controller language has been selected (See Set Operating Language on page 5 for more information) or whenever the controller is active.

Home Screen: (Idle - No formula running.)



Company Name

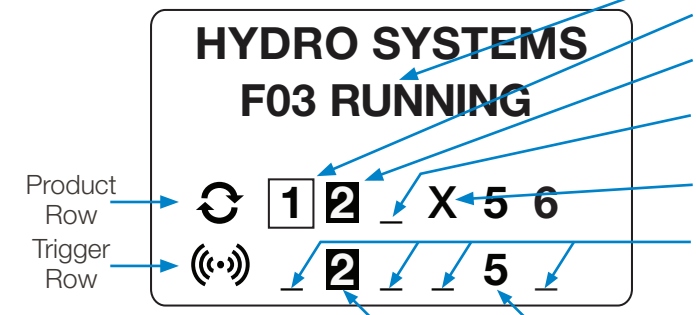
Connectivity Heartbeat (Indicates that the cellular gateway and the Connected Total Eclipse Controller are communicating successfully.)

Hot Keys:

Exit = Quick Formula Select.

Enter = Go To Main Menu.

Home Screen: (Active - Formula running.)



Active Formula (Formula name gets replaced by "RUNNING".)

Completed (The programmed amount has been dispensed.)

Active Product (This product is being dispensed.)

Unused Product (This product does not have any amount programmed for this formula.)

Product Error (This product has an amount programmed for this formula, but has not been calibrated.)

No Signal (These triggers are not currently receiving a signal.)

Signal Received (This trigger signal is being received, but it has not yet been qualified.)

Qualified Signal(This trigger signal has been qualified, so the product is being dispensed.)

Hot Keys:

Exit = Quick Formula Select.

Enter = Go To Main Menu.

Formula Quick-Select

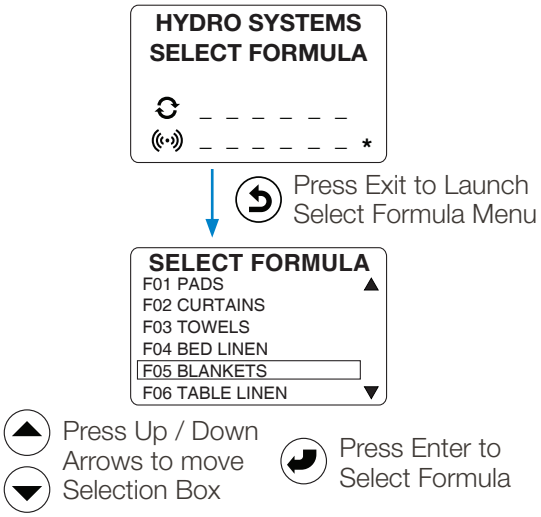
To prevent data logging errors, the operator must select a formula before washer operation starts; and all programmed products must be triggered during the cycle.

1) From the **Home Screen** press the **Exit / Formula Select** key.

2) Press the **Up / Down Arrow** keys to move selection box to the correct formula. All formulas appear, but only formulas with programmed products are selectable.

3) Press the **Enter** key to select the formula and return to the **Home Screen**, which will display the new formula selected.

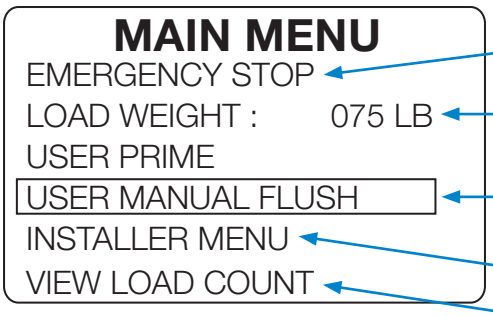
4) (Optional) Press the **Enter** key to go the **Main Menu** where the load weight can be adjusted.



operator menus (continued)

Main Menu

To reach the **Main Menu** from the **Home Screen** press any key (except the **Exit** key).



Emergency Stop: Stops all dispensing and formulas.

Load Weight Menu: Displays the default load weight for the current formula.

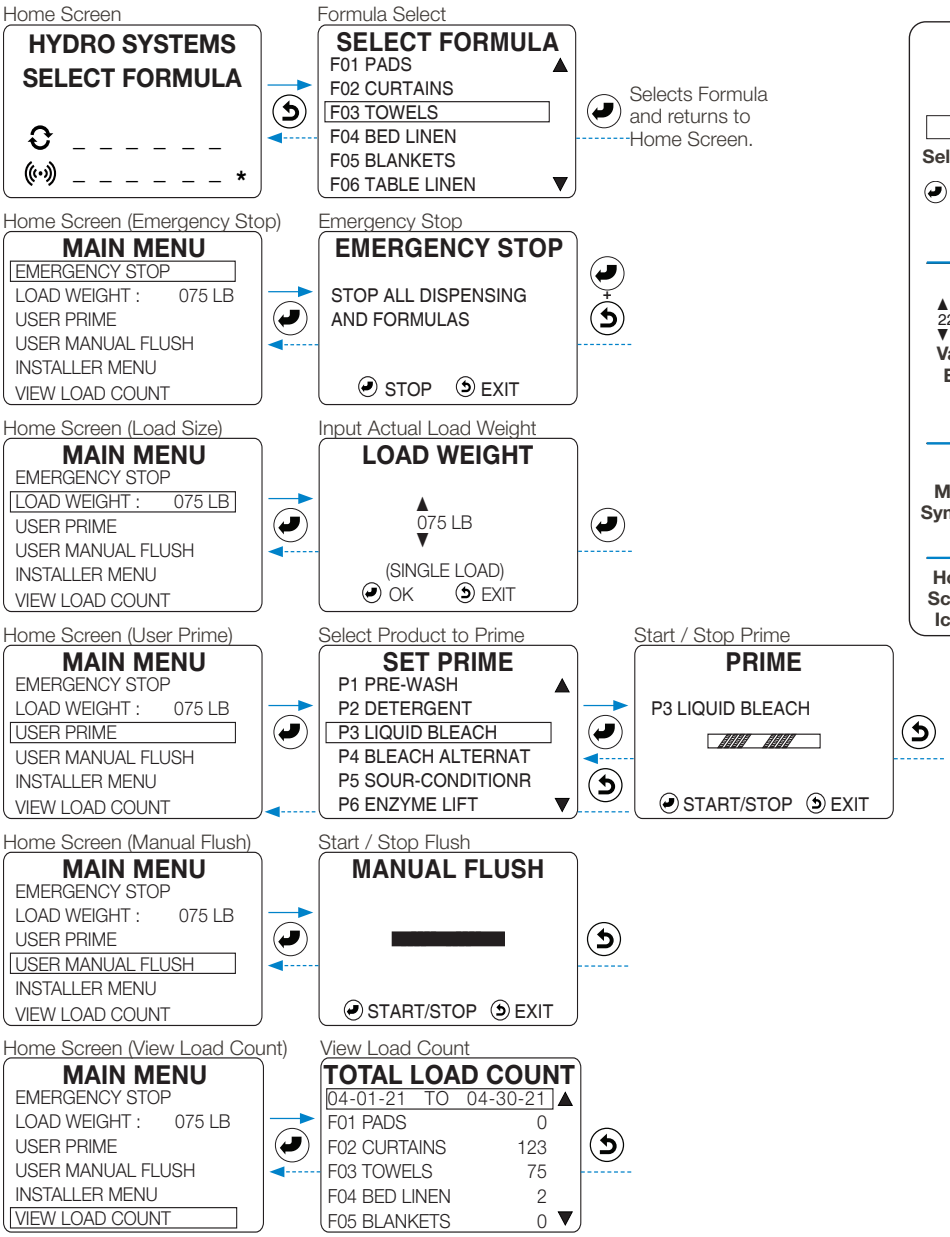
Selection Box: Use **Up / Down Arrow** to move to the desired menu. Press **Enter** key to launch the menu.

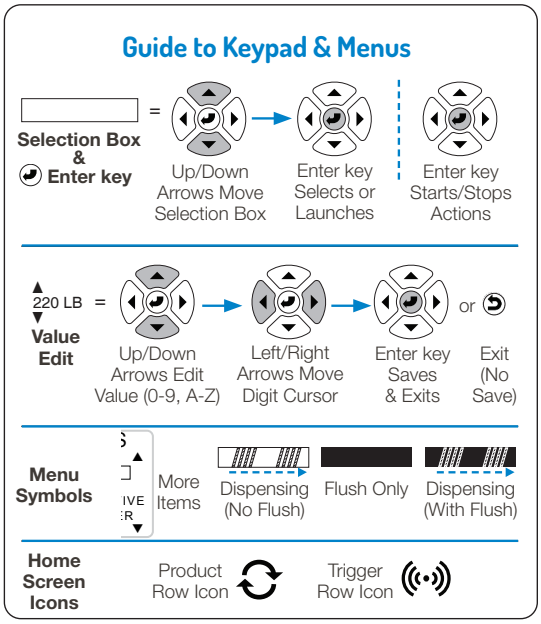
Installer Programs and Settings: Enter Installer password.

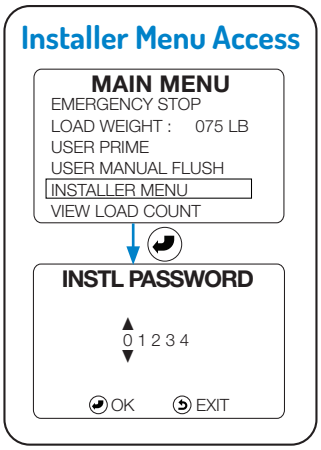
View Load Count: View the number of loads run for each formula.
(The View Load Count menu will appear when the Selection Box is moved below the Installer Menu using the Down Arrow.)

Return to HOME SCREEN: Just press the Exit key, or wait 15 seconds without pressing any keys.

Operator Menu Tree (All Menus)

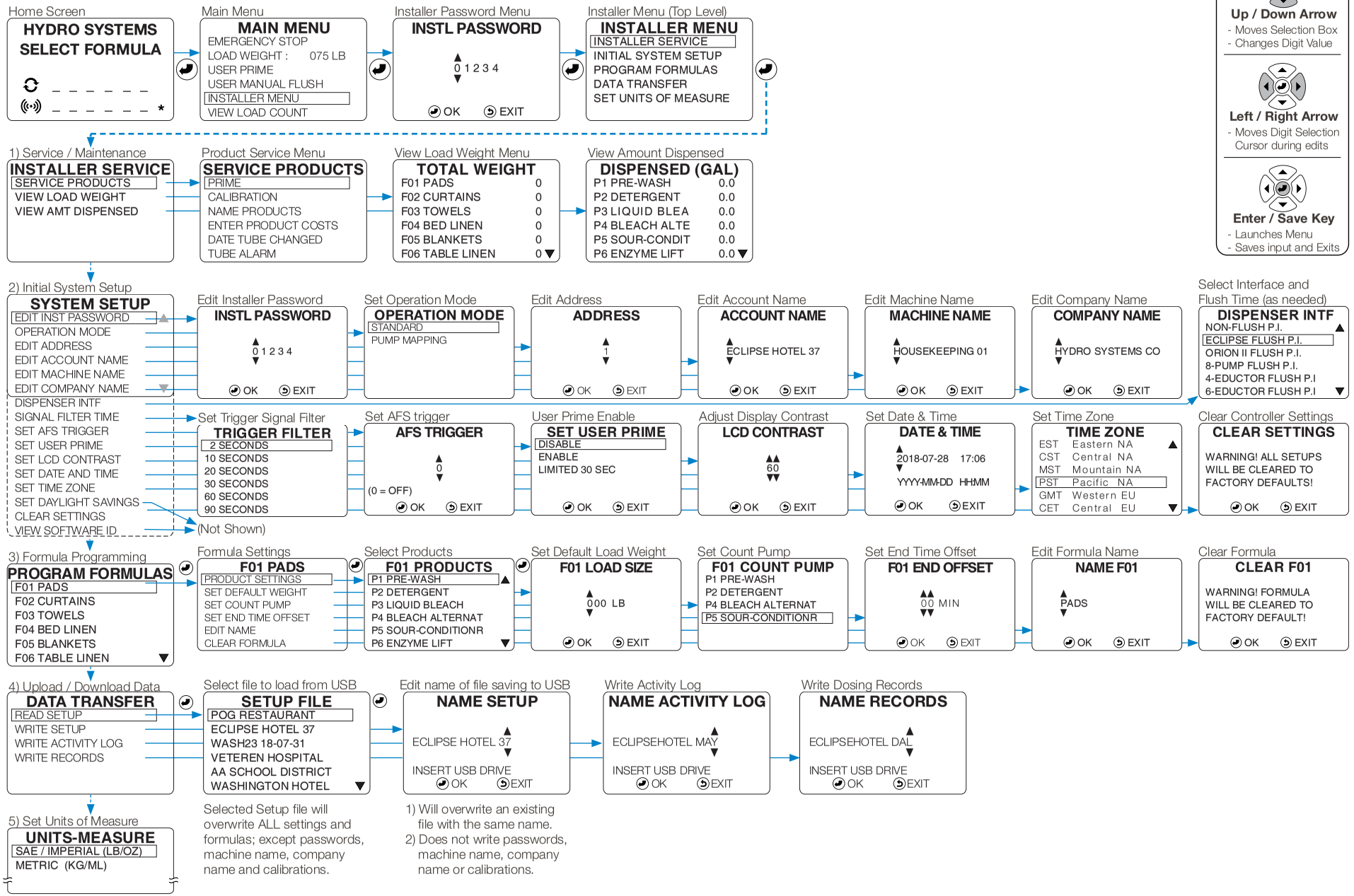






installer menus

Installer Menu Tree



Selected Setup file will overwrite ALL settings and formulas; except passwords, machine name, company name and calibrations.

1) Will overwrite an existing file with the same name.
2) Does not write passwords, machine name, company name or calibrations.

About Programming Formulas:

The PROGRAM FORMULAS menu allows an installer to create and edit formulas for both Standard and Pump Mapping Modes.

The Connected Total Eclipse controller allows up to **48 formulas to be created, each using up to 8 products**.

- Each formula is designated by a unique formula number (F01, F02, F03...).
- For ease of selection, a name can be used with a formula number. (See “Edit Name (Optional)” on page 16.)
- Formula names only appear when input by the installer or uploaded from a setup file on a USB flash drive.
- Formula names are not translated if the controller’s operating language is changed.
- Each formula can include up to 6 products when using a 6-product dispenser, or 8 products with an 8-product dispenser.
- Each product in a formula may be programmed for up to 3 amounts (A, B, and C Amount).
- A delay time may be programmed for any product in any formula.
- A product can be included in more than one formula, with different A, B, and C Amounts and a different delay.
- Each possible product is also given a unique product number (P1, P2, P3...).
- For ease of selection, a name can be added to the product number.
- Product names only appear when input by the installer or uploaded from a setup file on a USB flash drive.
- Product names are not translated if the controller’s operating language is changed.
- Each product in a formula must be calibrated before running the formula.

About the “Count Pump”:

A load is counted when the “Count Pump” product dispenses its last programmed amount. By default the “Count Pump” will be assigned to the highest numbered product (with an amount programmed) in each formula. Which will work if that product is always the last product to be dispensed.

Instead, it is recommended that the “Count Pump” designation always be manually assigned by the installer to the last product dispensed in each formula, rather than relying on the “highest numbered” default rule. Also, if a product assigned as the “Count Pump” has more than one amount programmed, the load will not be counted unless the last amount is dispensed.

Formula Rules

In both Standard and Pump Mapping Modes a product may be programmed to dispense multiple times, with up to three different amounts (identified as Amount A, B and C). A product will not dispense unless at least one non-zero amount is set for that product in the formula.

Standard Mode:
If only the A amount is programmed for a product in a formula, the first request results in Amount A dispensing. Additional requests within the same wash cycle are ignored. If only A and B amounts are programmed for a product in a formula, the first request results in the dispensing of Amount A. The second request results in the dispensing of Amount B. Additional requests (after the second request) are ignored.

If all three amounts (A, B, and C) are programmed for a product in a formula, the first request results in the dispensing of Amount A. The second request results in the dispensing of Amount B and the third request results in the dispensing of Amount C. Each additional request (after the third request) results in the dispensing of Amount C again.

These dispensing sequences are reset when the wash cycle ends. This occurs when the Count Pump’s highest amount has been dispensed and any programmed end of load offset time has expired.

Pump Mapping Mode:
In Pump Mapping Mode, pumps that are allocated to Prewash (Trigger 1) will only dispense the A amount. Amounts entered for B and C amounts will be ignored.

Pumps allocated to the Mainwash (Trigger 3 and 4) will dispense the B amount on the first trigger and the C amount on the second trigger. Amounts entered for A will be ignored.

Pumps allocated to the Spare (Trigger 5) and the Final Rinse (Trigger 6) will dispense the A amount on the first trigger, followed by the B amount on the second, and finally the C amount on the third trigger. The dispensing sequence is reset when the wash cycle ends.

programming (continued)

WARNING! It is imperative that when the installer is programming the washer signals, to allow plenty of time between triggers to ensure that a product (or group of products) will run for each of its triggers.

Programming Notes:

- Only program the product amounts that will actually be triggered by the washer supply signals.
- Program A, B, and C amounts for different product amounts within a wash formula, or use the amounts as a lockout by not programming any B or C amount.
- With an 8-product PI products 7 and 8 share the same trigger signals (respectively) as products 3 and 5. By programing alternating A, B and/or C amounts for product 3 and 7 (or 5 and 8) up to 8 products can be dispensed with only 6 signals.
- When using a flush manifold only one product may run at a time, and if multiple products are triggered simultaneously, they are placed in a queue to run sequentially

Program Formulas Menu

1) On the INSTALLER MENU menu, move the selection box onto the PROGRAM FORMULAS menu item and press the Enter key to launch the PROGRAM FORMULAS menu.

2) On the PROGRAM FORMULAS menu, use the Up / Down Arrows to indicate the formula to be configured and press the Enter key to launch the F## <formula name> menu.

Product Settings

1) At the F## <formula name> menu, move the selection box onto the PRODUCT SETTINGS menu item and press the Enter key to launch the F## PRODUCTS menu.

2) On the F## PRODUCTS menu, use the Up / Down Arrows to indicate the first product to be added to the formula and press Enter to launch the F## P# menu for that product. (F## is the Formula, P# is a Product.)

3) On the F## P# menu move the selection box onto the product parameter to configure and press the Enter key to launch the input screen for that value.

4) The F## P# DELAY input screen is where to input a value to delay the dispensing of any of the programmed amount by 0 to 999 seconds.

5) The F## P#A AMOUNT input screen is where to designate how much product will be dispensed by the first trigger signal, in ounces or ml.

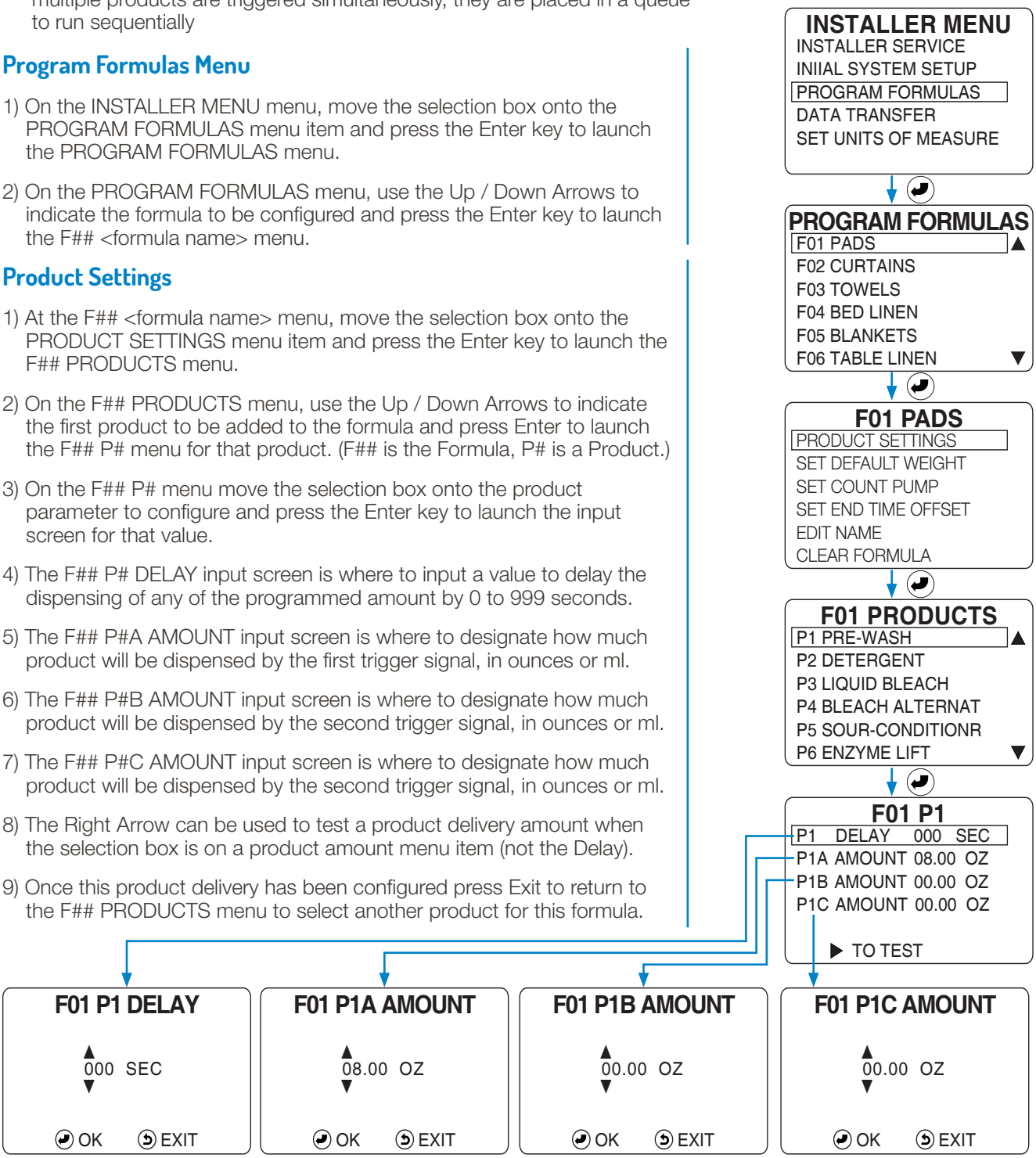
6) The F## P#B AMOUNT input screen is where to designate how much product will be dispensed by the second trigger signal, in ounces or ml.

7) The F## P#C AMOUNT input screen is where to designate how much product will be dispensed by the second trigger signal, in ounces or ml.

8) The Right Arrow can be used to test a product delivery amount when the selection box is on a product amount menu item (not the Delay).

9) Once this product delivery has been configured press Exit to return to the F## PRODUCTS menu to select another product for this formula.

Set Product Amounts and Delay



Set Default Weight

Here the **default** load weight for this formula can be input.

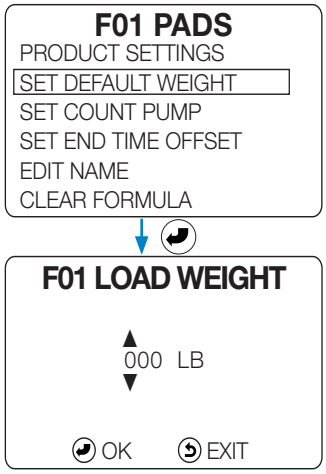
When a load runs, either the default load weight or the operator-entered actual load weight for a specific load is recorded in the data log (for Reports).

1) Move the selection box onto the SET DEFAULT WEIGHT menu item and press the Enter key to launch the F## LOAD WEIGHT input screen.

2) Change the active digit by pressing the Up / Down Arrow keys. Move the digit selection cursor with the Left / Right Arrow keys.

3) When the desired load size has been input, press the Enter key to save the weight and return to F## <formula name> menu.

Set Default Weight



Set Count Pump

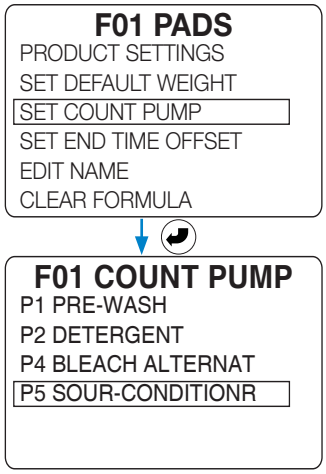
An installer should ALWAYS designate a Count Pump to indicate the end of a wash cycle, overriding the default automatic selection of the highest *numbered* product in a formula. (The traditional term “Count Pump” is still used, even when dispensing products with an eductor dispenser.)

NOTE! Only when the *last* programmed amount for the Count Pump product is dispensed, will the Count Pump feature end the wash cycle and reset the formula! Therefore, the installer must ensure that at least one amount is programmed for the Count Pump product AND that the last programmed amount is dispensed! (Or the cycle will be recorded as an “incomplete load” and the Load Count statistical data will be incorrect.)

1) Select SET COUNT PUMP and press Enter key. The F## COUNT PUMP selection screen displays all products with at least one amount set.

2) Move the selection box to the Count Pump product, and press Enter key to save the selection and return to the F## <formula name> screen.

Set Count Pump



Set End Time Offset (optional)

Setting an end time offset can be useful in some scenarios to make the Hydro Connect reporting more accurate.

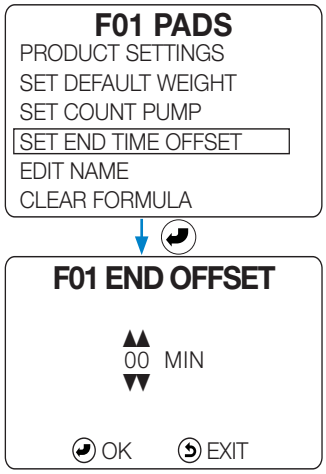
This value will offset the end time recorded in Hydro Connect for a given formula in the event that there is an operation **after** the count pump runs, like a long extract process for example.

1) Select SET END TIME OFFSET and press Enter key. The F## END OFFSET adjustment screen will be displayed.

2) Adjust the offset time (0-20 minutes) using the Up / Down Arrow keys. The two sets of double-arrow cursors indicate that all digits will increase or decrease at the same time.

3) When the proper time is selected, press the Enter key to save the selection and return to the F## <formula name> screen.

Set End Time Offset



programming (continued)

Edit Name (Optional)

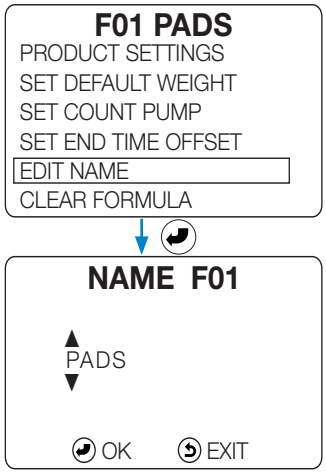
This feature allows a customized name to be added to a formula, up to 15 characters in length.

1) Move the selection box onto the EDIT NAME menu item and press the Enter key to launch the NAME F## input screen.

2) Change the active digit by pressing the Up / Down Arrow keys. Move the digit selection cursor with the Left / Right Arrow keys.

3) When the desired formula name has been input, press the Enter key to save the new customized name and return to F## <formula name> menu.

Set Formula Name



Clear Formula

Use this menu **only** if you want to completely clear a formula's settings.

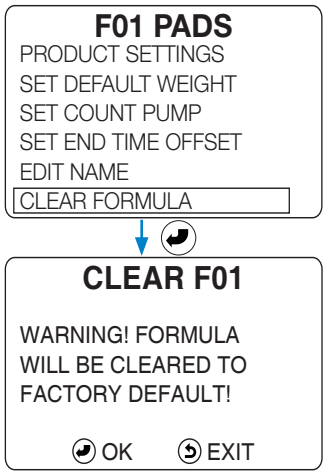
This option will revert all the formula's settings to their **factory default** values.

1) Move the selection box onto the CLEAR FORMULA menu item and press the Enter key to launch the CLEAR F## confirmation screen.

2) Press the Enter key to indicate it is OK to completely clear this formula's settings, or press the Exit key to cancel the CLEAR FORMULA function.

3) After the Formula's settings are deleted, the display will automatically return the F## <formula name> menu.

Clear Formula Settings



specifications

Controller Specifications

Category	Specification
Size	5.2" W x 4.50" H x 2.5" D (13.2 cm W x 11.4 cm H x 6.4 cm D)
Weight	0.65 lb. (0.30 kg)
Power Rating	SELV - Power source is dispenser.
System Capacity	99.99 oz. (2999 ml.) 8 product (with 3 amount settings per product) maximum
Data Input Field	15 characters maximum: (letters A-Z, numbers 0-9, hyphen [-], underscore [_] and space [ ]
Environmental Specifications	
IP, Pollution, Installation	IP Rating : 44 Pollution Category: 2 Installation Category: II
Operating Temperature	10° to 49° C (50° to 120° F) maximum
Operating Humidity	95% relative humidity, maximum
Operating Altitude	Install at or below 6.500 ft. (2000 M) maximum
Indoor Installation	Approved for indoor use only. Must not be installed outdoors.

Specifications subject to change without notice.

specifications (continued)

Gateway Specifications

Category	Specification
Size (Without ears)	5.06” W x 3.51” H x 1.61” D (12.85 cm W x 8.91 cm H x 4.1 cm D)
Weight	1.22 lb. (0.55 kg)
Power Ratings	Input Current 500 mA @ 12 VDC
	Input Voltage 9 to 36 VDC
	Power Consumption 6 W
Housing Material	Metal
Installation	DIN-rail mounting, Wall mounting (with optional kit)
Cellular Interface - US models	LTE Band 2 (1900 MHz) / LTE Band 4 (1700 MHz) / LTE Band 5 (850 MHz) / LTE Band 12 (700 MHz) / LTE Band 13 (700 MHz) / LTE Band 14 (700 MHz) / LTE Band 66 (1700 MHz) / LTE Band 71 (600 MHz)
	UMTS Bands: Band 2 (1900 MHz) / Band 4 (1700 MHz) / Band 5 (850 MHz)
	Carrier Approval: Verizon, AT&T
Cellular Interface - EU models	LTE Band 1 (2100 MHz) / LTE Band 3 (1800 MHz) / LTE Band 7 (2600 MHz) / LTE Band 8 (900 MHz) / LTE Band 20 (800 MHz) / LTE Band 28A (700 MHz)
	UMTS Bands: Band 1 (2100 MHz) / Band 3 (1800 MHz) / Band 8 (900 MHz)
Cellular Interface - AP models	LTE Band 1 (2100 MHz) / LTE Band 3 (1800 MHz) / LTE Band 5 (850 MHz) / LTE Band 8 (900 MHz) / LTE Band 9 (1700 MHz) / LTE Band 18 (850 MHz) / LTE Band 19 (850 MHz) / LTE Band 26 (850 MHz) / LTE Band 28 (700 MHz)
	UMTS Bands: Band 1 (2100 MHz) / Band 5 (850 MHz) / Band 6 (800 MHz) / Band 8 (900 MHz) / Band 19 (800 MHz)

warranty

Limited Warranty

Seller warrants solely to **Buyer** the Products will be free from defects in material and workmanship under normal use and service for a period of one year from the date of completion of manufacture. This limited warranty does not apply to (a) hoses; (b) and products that have a normal life shorter than one year; or (c) failure in performance or damage caused by chemicals, abrasive materials, corrosion, lightning, improper voltage supply, physical abuse, mishandling or misapplication. In the event the Products are altered or repaired by **Buyer** without **Seller’s** prior written approval, all warranties will be void.
No other warranty, oral, express or implied, including any warranty of merchantability or fitness for any particular purpose, is made for these products, and all other warranties are hereby expressly excluded.

Seller’s sole obligation under this warranty will be, at **Seller’s** option, to repair or replace F.O.B. **Seller’s** facility in Cincinnati, Ohio any Products found to be other than as warranted.

Limitation of Liability

Seller’s warranty obligations and **Buyer’s** remedies are solely and exclusively as stated herein. **Seller** shall have no other liability, direct or indirect, of any kind, including liability for special, incidental, or consequential damages or for any other claims for damage or loss resulting from any cause whatsoever, whether based on negligence, strict liability, breach of contract or breach of warranty.

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