UMP Hospitality Instruction Manual

TABLE OF CONTENTS

Settings Guide 2
Installation Diagram 3
Dimensions 3
Accessory Kit 3
Installation 4
Electrical 5
Operation 6
Programming 7
Parts Diagram 9
Wiring Diagram 10
Warranty Information 12
Knight Locations 12

SETTINGS GUIDE

	PROBE MODE		PROBELESS MODE	
	DOOR	CONVEYOR	DOOR	CONVEYOR
RINSE SPEED	0 -100%	0 -100%	0 -100%	0 -100%
RINSE LIMIT	0 - 30s	NO	0 - 30s	NO
RINSE DELAY	0 - 14s	NO	0 - 14s	NO
INITIAL CHARGE	NO	NO	0 - 150s	0 - 128s
RECHARGE	NO	NO	0 - 30s	0 - 20s
RECHARGE AFTER N RACKS	NO	NO	1 - 20	1 - 20
CONCENTRATION	0 - 199K	0 - 199K	NO	NO
ALARM DELAY	0 - 512s	0 - 512s	NO	NO
PASSWORD	YES	YES	YES	YES
LANGUAGE	YES	YES	YES	YES
RESET RACK COUNT	YES	YES	YES	YES
LOW LEVEL ALARM	YES	YES	YES	YES
CONCENTRATION ALARM	YES	YES	NO	NO
RACK TIME	NO	0 - 30s	NO	0 - 30s
INITIAL CHARGE REPEAT	NO	NO	YES	YES
WATER CHANGE COUNT	0 - 999	0 - 999	0 - 999	0 - 999
DETERGENT PULSE %	10 - 90%	10 - 90%	NO	NO
DETERGENT PULSE RATE	3 - 15s	3 - 15s	NO	NO

Default Settings

- System is in Conductive Probe Mode
- System is set for Door Machines
- Detergent Pulse Rate is 5 Seconds (dry) or 3 Seconds (liquid)
- Default Password is 0000
- Rinse Pump Speed is 50%
- Detergent Concentration Setpoint is 25
- Detergent Alarm Delay is set to 64 Seconds
- Rinse Limit is 30 Seconds
- Detergent Percentage Pulse is 50% (dry) or 85% (liquid)
- Rinse Delay is 0 Seconds
- Initial Charge is 30 Seconds
- Initial Charge Repeat is On
- Recharge is 5 Seconds
- Change Water Count is 0 Racks
- Number of Racks between Recharge is 1
- Rack Time is 12 Seconds

Equipment Ratings

This includes equipment supply, description of I/O connections, duty cycle and operating environmental conditions.

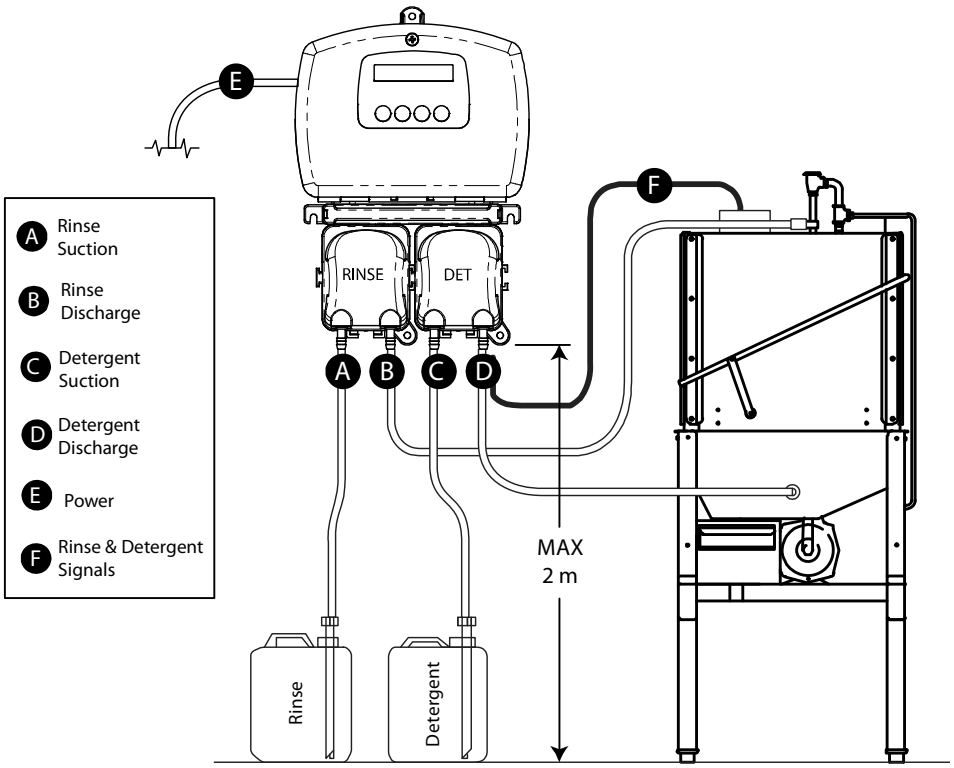
- Pollution degree 2
- Installation category 2
- Altitude <2187 yard (<2000 m)
- Humidity 50% to 80%
- Electrical supply 120, 208, or 240 Vac, 50/60 Hz
- Mains supply voltage fluctuations are not to exceed 10 percent of the nominal supply voltage
- Indoor use only
- Temperature 41°F to 104°F (5°C to 40°C)
- Rinse flow rate: .135 oz/min—1.96 oz/min (4-58 ml)
- Detergent flow rate: 16.9 oz/min (500ml/min)

CAUTION: Wear protective clothing and eyewear when dispensing chemicals or other materials. Observe safety handling instructions (MSDS) of chemical mfrs.

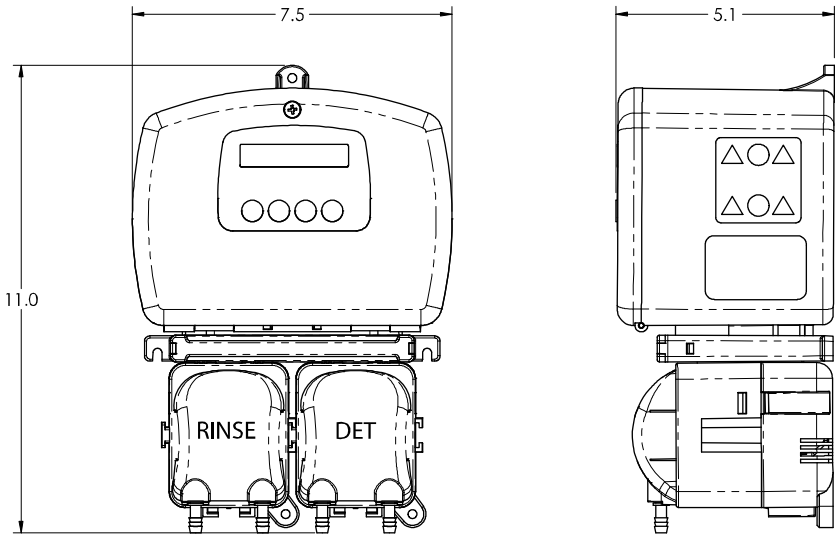
CAUTION: To avoid severe or fatal shock, always disconnect main power when servicing the unit.

CAUTION: When installing any equipment, ensure that all national and local safety, electrical, and plumbing codes are met.

INSTALLATION DIAGRAM (UMP HOSPITALITY-200L)



MAIN UNIT DIMENSIONS



ACCESSORY KIT

UMP Hospitality 200L Accessory Kit

1. 1/4 " Poly-tubing, 20 ft. (7028109)
2. 2 x Pick-up tube (7020180)
3. 2 x Expansion screw: includes wall anchor and screw (7600121)
4. 1 x Check Valve, 1/4 tube (7901350)
5. 1 x Fitting, Bulkhead Ell (7023342)
6. 1 x Probe: includes gasket & nut lock (7005190)
7. 4 x Tie Wrap, 3.5 in long (0300121)
8. 1 x Tube T-50EH Plus 8"(7018061)
9. Instruction Manual (0901177)

UMP Hospitality 200D Accessory Kit

1. 1/4 " Poly-tubing, 20 ft. (7028109)
2. 1 x Pick-up tube (7020180)
3. 2 x Expansion screw: includes wall anchor and screw (7600121)
4. 1 x Check Valve, 1/4 tube (7901350)
5. 1 x Fitting, Bulkhead Ell (7023342)
6. 1 x Probe: includes gasket & nut lock (7005190)
7. 2 x Tie Wrap, 3.5 in long (0300121)
8. Tube T-50EH Plus 4"(7018061)
9. Instruction Manual (0901177)

INSTALLATION

Mount the unit (using suitable hardware) with the provided bracket in the accessory kit. Try to keep the unit within three feet from the final rinse line to avoid long tubing runs.

CAUTION: Do not mount the unit in the direct path of steam. This can short circuit and permanently damage the unit. Mounting the unit on the side, on the back, or on the vents of the dishwasher may cause thermal overload and damage or hinder the performance of the unit.

Check all applicable plumbing and electrical codes before proceeding with the installation. This will help to ensure that the system is installed in safe and suitable manner. A wiring schematic of the dishwasher should be used as reference for making electrical connections — this is typically provided by the dishwasher manufacturer if one cannot be located on the machine itself.

Rinse Plumbing

(1) Install the provided 1/4" tube x 1/8" NPT injection fitting into the side or bottom of the dishwasher rinse line between the rinse solenoid valves and the rinse jets. If necessary, drill a 11/32" hole and tap to 1/8" NPT. Use of a saddle clamp may be desired on copper rinse line for better support.

(2) Cut a suitable length of 1/4" OD poly tubing and connect between the discharge (right) side of the rinse pump's squeeze tube and the injection fitting. Cut 2" of the supplied T-50EH tubing (7018061) and zip tie the tubing to the pump suction and discharge fitting. (See Diamgram A below). Use the T-50EH tubing to connect poly tube to the pump fitting.

(3) Cut a suitable length of 1/4" OD poly tubing and connect between the suction (left) side of the rinse pump's squeeze tube and the pickup tube provided. Be sure to draw tubing through the end of the pickup tube.

(4) Hand-tighten the compression nuts on both the rinse fitting and pickup tube. Plastic ties can be used to cinch around the connections where the poly tubing is inserted into the pump's squeeze tube.

Diagram A

Liquid Detergent Plumbing

(1) Install the provided bulkhead fitting through a wall of the wash tank (above water level). If an existing mounting hole cannot be located, use of a 7/8" hole saw or punch may be desired.

(2) Cut a suitable length of 1/4" OD poly tubing and connect between the discharge (right) side of the detergent pump's squeeze tube and the bulkhead fitting.

(3) Cut a suitable length of 1/4" OD poly tubing and connect between the suction (left) side of the detergent pump's squeeze tube and the pickup tube provided. Be sure to draw tubing through the end of the pickup tube.

(4) Hand-tighten the compression nuts on both the bulkhead fitting and pickup tube. Plastic ties can be used to cinch around the connections where the poly tubing is inserted into the pump's squeeze tube.

Dry Detergent Plumbing

(1) A powder or solid type feeder (not provided) should be used for dispensing dry detergent products. Follow the instructions included with the detergent feeder for installation, and recommended water temperature/pressure.

(2) Cut a suitable length of 1/4" OD copper tubing (not provided) and connect between the input side of the water solenoid and the water source. Maximum recommended water temperature is 140°F (60°C).

(3) Cut a suitable length of 1/4" OD copper tubing (not provided) and connect between the output of water solenoid to a powder or solid detergent feeder.

(4) Carefully tighten the compression nuts on the water solenoid — over tightening may cause solenoid to leak. Tighten connections to the water source and detergent feeder as needed.

ELECTRICAL

Turn off all power before wiring the control. Check with a voltmeter to ensure power is off.

Main Power Connection

One step-down transformer is provided with the UMP control. Connect the high voltage side, through a switch or circuit breaker in close proximity to the equipment and marked UMP, to any 115/208/230 VAC power source that is “on” when the dishmachine is “on” (i.e. mains switch on dishmachine).

NOTE: The transformer provides power to both the detergent and rinse circuits. The UMP will only operate detergent or rinse when electrically signaled.

To wire main power connection:

(1) Check the voltage of the main power source and make sure that it matches one of the three available input voltages (115/208/230 VAC) of the transformer inside the Ultra Micro-Pro.

(2) Remove all power from the dishwasher.

(3) Connect leads from the main power source to the appropriate wires on the transformer.

* CAUTION: The UMP unit has high voltage connected to the transformer. Always disconnect main power when servicing the unit.

Remote Alarm

A remote 3 - 28 VDC alarm may be wired to the “alarm” terminals on the circuit board. See wiring diagram on page 10.

Pressure Switch Kit

For applications that do not have a dedicated rinse signal from the dishwasher, the pressure switch can be used to create a rinse signal using the transformer in the unit (see wiring diagram for further details).

(1) Remove power from the dishmachine. Ensure that power is removed from the dispenser.

(2) Locate the rinse injection fitting presently installed on the dishmachine (if applicable). Near the injection point, drill a hole for the pressure switch. Drill the hole using a 11/32" bit and tap to 1/8" NPT.

(3) Wrap the threads of the pressure switch with 3 - 4 turns of plumbing tape, then install the pressure switch into the drilled/tapped hole.

(4) Wire the pressure switch per the appropriate wiring diagram on page 10.

Detergent Power Signal

A detergent power signal is required to activate the detergent probe sensing or probeless initial charge. The detergent signal can be jumpered from main power for applications where the main power is controlled by the on/off state of the dishmachine.

(1) Check the dishwasher for a power source that is active during the washcycle only (example: the magnetic contactor that controls the washpump motor) and verify voltage. The Ultra Micro-Pro circuit board will accept a detergent power signal of 14 - 240 VAC.

(2) Remove all power from the dishwasher.

(3) Connect leads from the detergent signal power source to the detergent signal terminals on the circuit board. Detergent signal must be the same voltage as Rinse signal.

Rinse Power Signal

In addition to running the rinse pump, the rinse power signal also triggers the detergent “recharge” injection if probeless mode is selected

(1) Check the dishwasher for a power source that is active during the rinse cycle only (example: the rinse solenoid or rinse cycle light) and verify voltage. The Ultra Micro-Pro circuit board will accept a signal of 14 - 240 VAC.

(2) Remove all power from the dishwasher.

(3) Connect leads from rinse signal source to the rinse signal terminals on the circuit board. Rinse signal must be the same voltage as Detergent signal.

Conductive Probe Installation (if used)

(1) Install the probe in the wash tank below the water level. It should be away from incoming water supplies, near the recirculating pump intake, and 3 to 4 inches from corners, heating elements, or the bottom of the tank. If an existing mounting hole cannot be located, use of a 7/8" hole saw or punch may be desired.

(2) Connect leads from the terminals on the probe to the terminals marked “PROBE” on the circuit board.

(3) For best results, use 18 AWG multi-stranded copper wire for the probe connection. Avoid running the wire near high voltage AC lines.

OPERATION

Detergent — Probe Mode

The system has the option of using a conductive. With the detergent signal “on”, the probe senses detergent concentration. When concentration drops below the setpoint, the control automatically turns on detergent feed. As the detergent feeds, the control senses the rate at which the detergent concentration is approaching the setpoint. The control then begins to pulse feeds to prevent over-use of chemical. The pulse feed rate will depend on how fast the setpoint is being approached.

The detergent alarm will sound if the setpoint is not reached within the alarm delay time period. The alarm can be temporarily silenced. A “feed limit” feature allows you to set the unit to automatically shut off the detergent feed when the alarm has been activated.

Detergent — Probeless Mode

Controls detergent concentration without a probe, based on timed detergent feed modes. Initial charge time feeds detergent to bring the dishmachine to working concentration when initially filled with water. The initial charge can be activated by a detergent signal, or by the rinse signal (of 30 seconds duration, or longer) when using door mode. The initial charge counter will increment for each activation.

Recharge time feeds detergent to maintain detergent concentration as rinse water dilutes the dishmachine. The recharge is triggered after a specified number of racks passes through the machine.

Rinse Pump

The rinse pump will operate whenever the rinse signal is energized. The rinse delay feature will postpone the activation of the rinse pump until the delay time has expired. The rinse limit shuts down the rinse pump after the signal has been present for a selected time. Rinse delay and rinse limit are functional with door machines only.

BUTTON FUNCTIONS

- **ENTER:** Holding the enter button for 3 seconds (approx.) switches between run and program modes. Enter also advances through programming menus.
- **SCROLL:** The scroll button moves the position of the cursor where number changes are done. The scroll button toggles between choices in menus that have selectable settings.
- **UP (⇧):** Increases numeric values during programming The UP button also acts as rinse prime during operation. To prime the rinse pump, hold down SCROLL and UP at the same time. The UP button also shows the rack count if pressed during operation.
- **DOWN (⇩):** Decreases numeric values during programming. The DOWN button also shows the initial charge count if pressed during operation (only when using probeless mode).
- **TO PRIME DETERGENT:** To prime detergent (pump or solenoid) hold down the UP and DOWN buttons at the same time.
- **TO PRIME RINSE:** To prime rinse pump hold down the SCROLL and UP buttons at the same time.

Alarm Mute

During normal operation, the low detergent alarm (probe mode) can be silenced by pressing the ENTER button. The audio alarm will turn off for the alarm delay period of time to allow the chemical container to be checked and changed if necessary.

De-Lime Mode

Press ENTER and SCROLL until de-lime mode shows on the display. Chemical injection will be halted while de -lime mode is on but will resume normal operation when turned off. The unit will automatically exit de-lime mode after 10 minutes, or pressing ENTER and SCROLL.

PROGRAMMING

- If you wish to exit the programming mode, or **save new settings,** and return to normal operation at any time, hold down the ENTER button until you see the UMP DIGITAL display return (about 3 seconds).
- While programming, if no buttons are pressed for approximately 2 minutes, the UMP Digital will automatically return to normal operating mode. Changes will not be saved.
- To change the value of any numeric setting, press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number. The digit will flash to show you which one is selected.

When you’re ready to get started, hold down the ENTER button until you see ENTER PASS CODE (about 3 seconds) then continue on the following page...

PROGRAMMING

ENTER PASS CODE 0000

All new systems are shipped from the factory with the pass code set at 0000. If the system is new, press ENTER to continue.

If the pass code has been changed from the default of 0000 (explained below) press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number, then press ENTER to continue.

CHANGE PASS CODE 0000

This menu item allows you to change the pass code. Press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number. When finished, press ENTER to continue.

ENGLISH

If you wish to change the menu language, press SCROLL to advance through the available choices until your desired language name is shown on the display. Press ENTER to continue.

PROBE MODE

Use the SCROLL button to choose probe or probeless mode, then press ENTER to continue.

- If you chose to use PROBE mode, you will see the following menu...

DETERGENT CONCEN 025

Detergent concentration is set in Knight Units. Press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number (the range is from 0 to 199 Knight Units). Press ENTER to continue.

DET. PULSE PERCENT XX

This setting tells the system when to begin pulse feeding; specifically at what percent of the detergent concentration you have just set (in the previous display).

85% is the default value for liquid detergent
50% is the default value for dry detergent

Press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number (the range is 10% to 90%). Press ENTER to continue.

DET. PULSE RATE XX

Detergent pulse rate sets the “off” time in between pulses (during pulse feed). This feature can be helpful with dry chemicals that need time to dissolve in the washtank.

3 seconds is the default value for liquid detergent
5 seconds is the default value for dry detergent

Press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number (the range is 3 - 15 seconds). Press ENTER to continue.

DOOR MODE

Use SCROLL to choose door mode or conveyor mode for the type of dishmachine in use, then press ENTER to continue.

- If you chose to use PROBELESS mode, you will see the following menu...

DOOR MODE

Use SCROLL to choose door mode or conveyor mode for the type of dishmachine in use, then press ENTER to continue.

RACK TIME 000

This setting will only appear if conveyor is chosen. Enter the time for 1 rack to pass through machine.

Press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number (the range is from 0 to 30). Press ENTER to continue.

INITIAL DET CHAR 000

The initial charge feeds detergent to achieve working concentration when the dishmachine is initially filled with a fresh tank of water. The available timing ranges are...

DOOR: 0 to 150 seconds
CONVEYOR: 0 to 128 seconds

Press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number. Press ENTER to continue.

INITIAL CHARGE REPEAT

This setting is used to prevent unwanted multiple repeating of the initial charge on certain types of dishwashers. ON is the default setting and initial charge will not be limited. OFF requires that the main power must be cycled before the system will allow another initial charge feed.

Press SCROLL to select on/off, then press ENTER to continue.

RACK TIME 000

This setting will only appear if conveyor is chosen. Enter the time for 1 rack to pass through machine.

Press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number (the range is from 0 to 30). Press ENTER to continue.

ALARM DELAY 000

Alarm delay is a time frame that the detergent setpoint is expected to be reached within. If the detergent setpoint is not achieved within the set time, the alarm will sound intermittently until the problem is resolved or power is cycled.

For door machines, this setting should be calibrated to 5 – 10 seconds shorter than the washcycle. For conveyor machines, should be slightly longer than the time it takes for the unit to achieve the setpoint with a fresh tank of water.

Press SCROLL to select the digit you wish to change, then use ⇧/⇩ (range is 0 to 512 seconds). Press ENTER to continue.

DET RECHARG TIME 00

The recharge feeds detergent to maintain the working concentration as rinse water dilutes the dishmachine. The available timing ranges are...

DOOR: 0 to 30 seconds
CONVEYOR: 0 to 20 seconds

Press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number. Press ENTER to continue.

RECH AFTER RACKS 00

This setting allows you to choose how many racks will be counted before triggering the recharge feed. The range is 0 to 20 racks.

Press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number. Press ENTER to continue.

RINSE SPEED 050

This setting changes the speed of the rinse pump. The pump will run when you press SCROLL to select the digit you wish to change. Use ⇧/⇩ to change the number, the speed of the pump will change as the number is changed. When finished, press ENTER to continue.

RINSE DELAY 00

This setting will only appear if using door mode. This feature delays the operation of the rinse pump for a selectable time once the rinse signal is received. The delay time helps to conserve rinse agent on door-type dishwashers. The range is from 0 to 14 seconds. Press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number. Press ENTER to continue.

RINSE LIMIT 00

This setting will only appear if using door mode. This feature will stop the rinse pump after XX seconds of continuous rinse signal, conserving rinse agent on door-type dishmachines that fill through the rinse valve. The range is from 0 to 30 seconds. Press SCROLL to select the digit you wish to change, then use ⇧/⇩ to change the number. Press ENTER to continue.

WATER CHANGE CNT

This setting specifies how many racks to count before showing a message on the display to change water (refill with a fresh tank). Press SCROLL, then choose a number between 0 and 999. When the message to change water appears on the screen, it can be reset by pressing the ENTER button (or cycling power off/on). Press ENTER to continue.

UP TO RESET RACK CNT

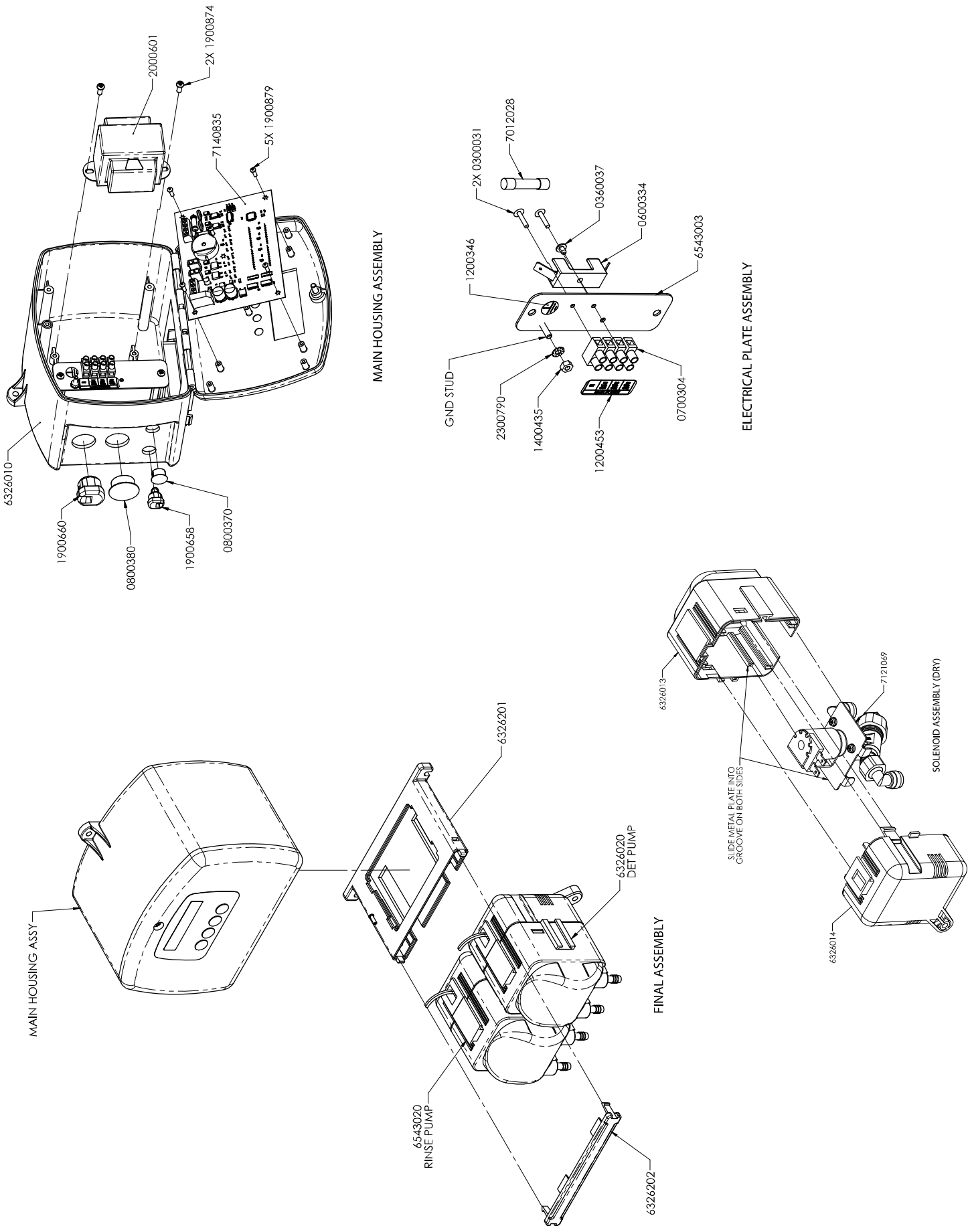
If you wish to clear the rack counter, press the UP button. The display will briefly flash to the rack counter to verify that it was set back to zero, and will then return to the display at left. Press ENTER to continue.

UP – RESET INIT CNT

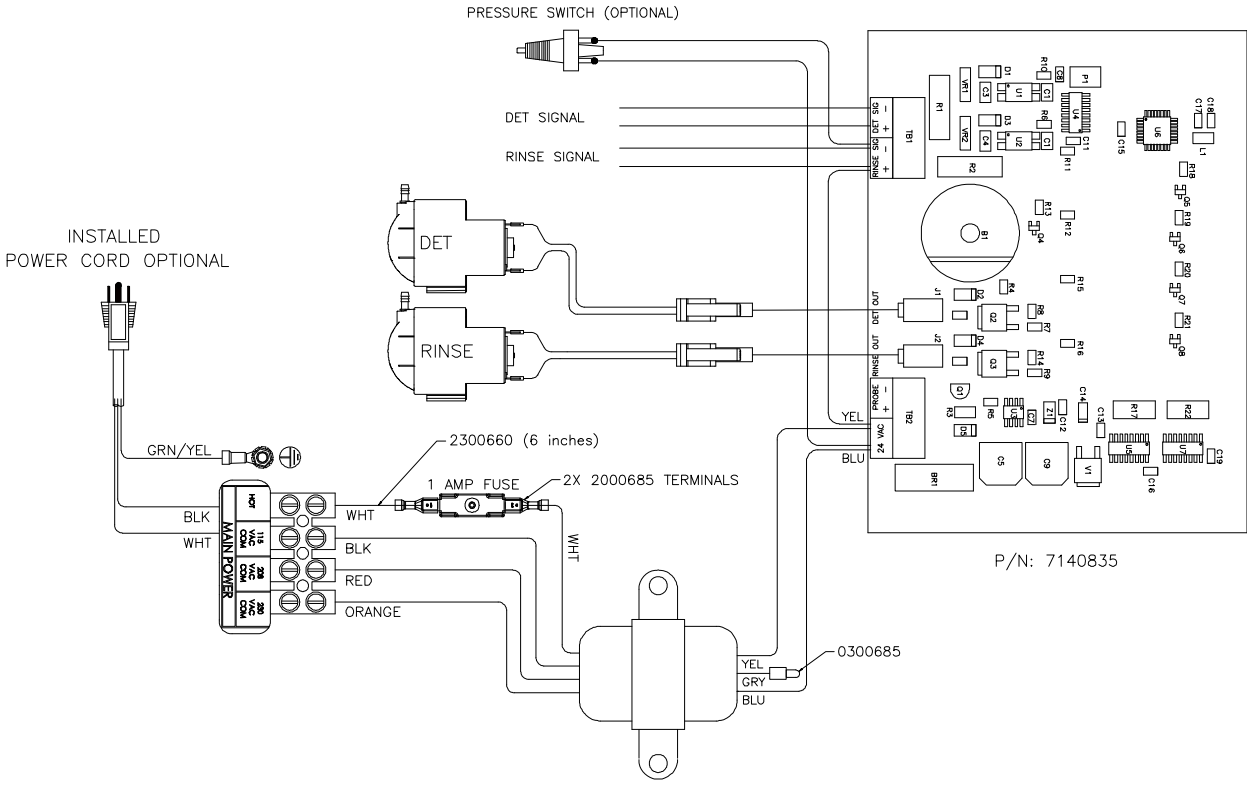
This setting will only appear if using probeless mode. To clear the initial charge count, press the UP button and the display will flash to indicate the counter was cleared. When finished, press ENTER to continue.

Wrap around to first menu item

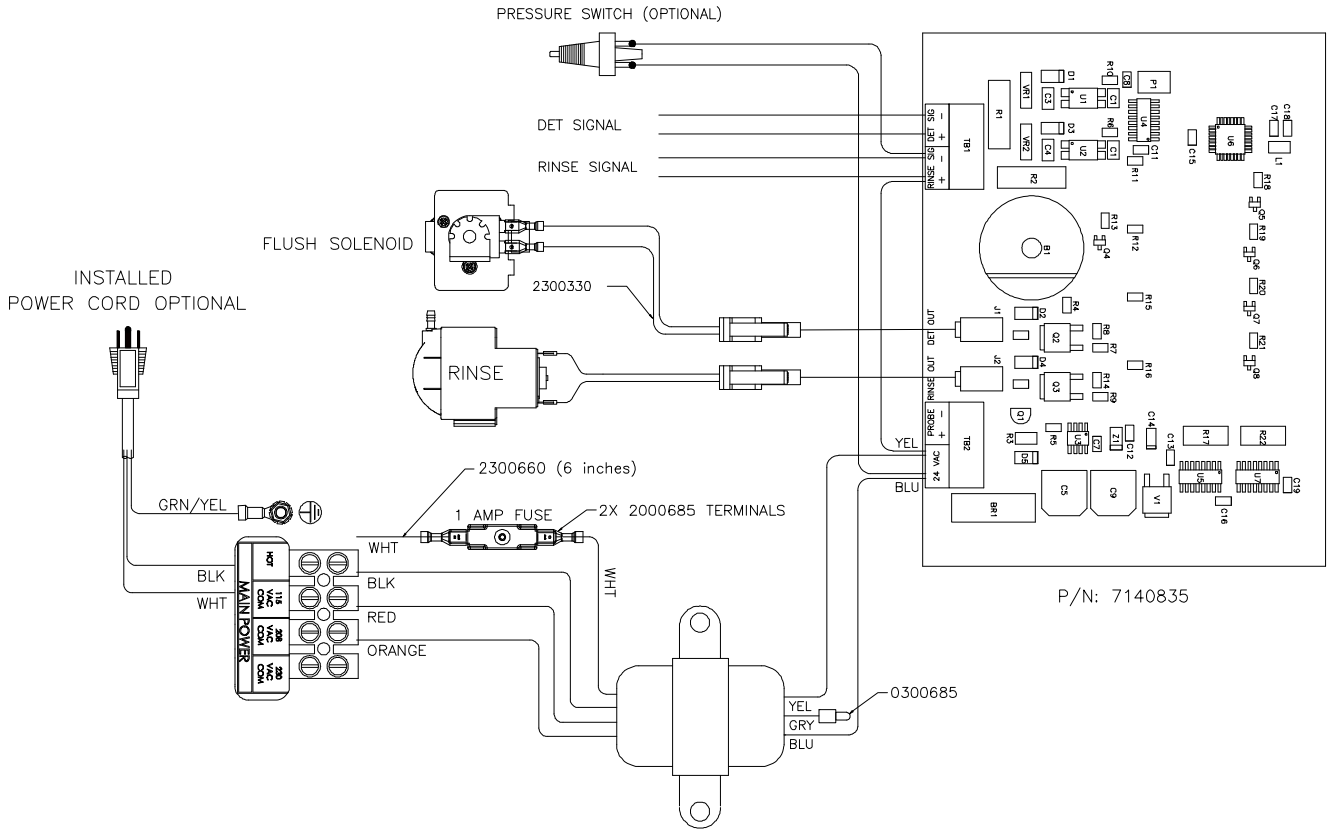
PARTS DIAGRAM



UMP HOSPITALITY-200L PRODUCT WIRING



UMP HOSPITALITY-200D PRODUCT WIRING



NOTES

DISCLAIMER

Knight LLC does not accept responsibility for the mishandling, misuse, or non-performance of the described items when used for purposes other than those specified in the instructions. For hazardous materials information consult label, MSDS, or Knight LLC. Knight products are not for use in potentially explosive environments. Any use of our equipment in such an environment is at the risk of the user, Knight does not accept any liability in such circumstances.

WARRANTY

All Knight controls and pump systems are warranted against defects in material and workmanship for a period of ONE year. All electronic control boards have a TWO year warranty. Warranty applies only to the replacement or repair of such parts when returned to factory with a Knight Return Authorization (KRA) number, freight prepaid, and found to be defective upon factory authorized inspection. Bearings and pump seals or rubber and synthetic rubber parts such as “O” rings, diaphragms, squeeze tubing, and gaskets are considered expendable and are not covered under warranty. Warranty does not cover liability resulting from performance of this equipment nor the labor to replace this equipment. Product abuse or misuse voids warranty.

FOOTNOTE

The information and specifications included in this publication were in effect at the time of approval for printing. Knight LLC reserves the right, however, to discontinue or change specifications or design at any time without notice and without incurring any obligation whatsoever.

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