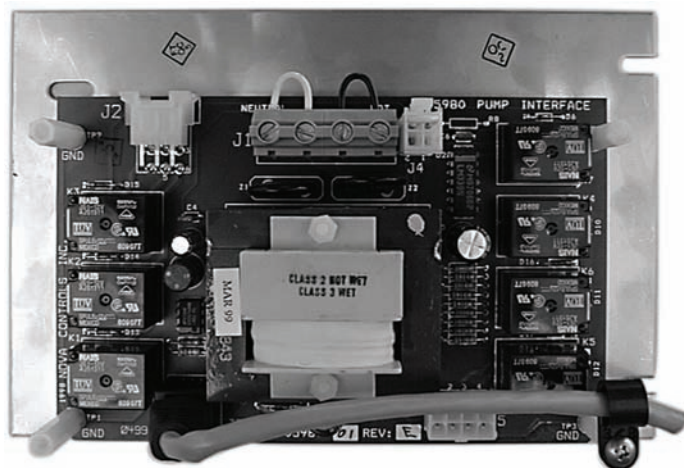




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ECLIPSE

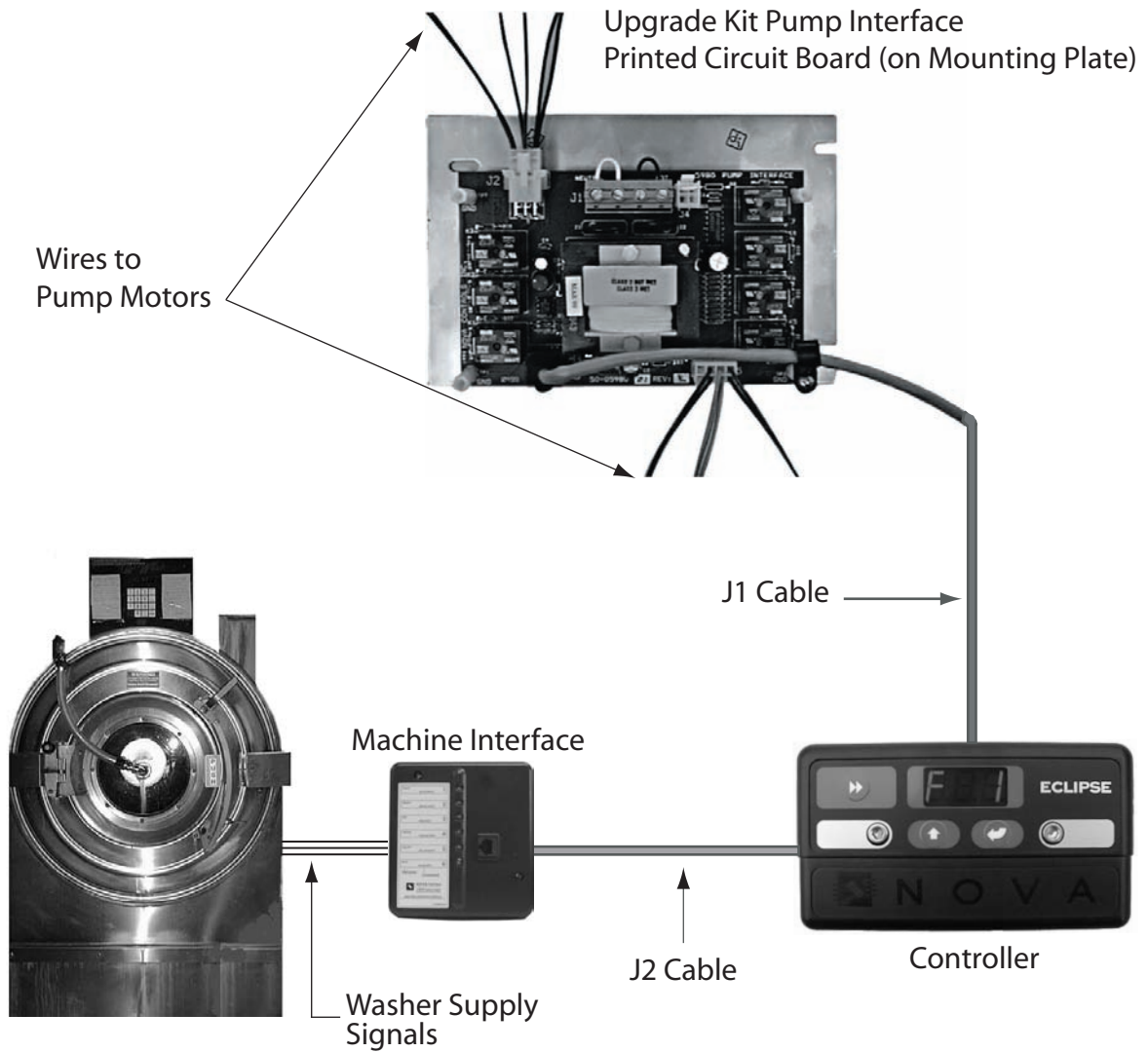
LAUNDRY DISPENSER UPGRADE KIT



Reference Manual

Installation and Operation

Eclipse System Diagram



1 Features and Operation

Description of Features

The ECLIPSE laundry dispensing system upgrade kit uses the latest technology to provide low-cost, reliable operation with full features for older laundry dispensing system pump cabinets that use AC motors. The following list outlines many of the features of the ECLIPSE upgrade kit.

- **Compatibility**
ECLIPSE components are plug compatible with Nova Controls Orion dispensing systems. The same easy-to-install modular design makes the ECLIPSE dispensing system components suitable for use with components from earlier Orion dispensing systems. Everything is plug compatible.
- **Six Product Capability**
ECLIPSE dispensing systems are capable of dispensing up to 6 products with a flush manifold.
- **Flush Capability**
When used with an ECLIPSE Controller, a programmable output is available for controlling a flush manifold water valve. Flush time is easily programmed in seconds. A flow switch input is provided as a safety interlock to stop pumps in the event of no (or low) water flow.
- **Safe Wiring**
The ECLIPSE dispensing system requires high voltage connections only at the Machine Interface (MI) to washer signal connections. All other wiring is plug-in with telephone-type communication cables. Dispenser power is sourced from a wall outlet.
- **Convenient Mounting**
The ECLIPSE Pump Interface Circuit Board is mounted on a stainless steel mounting base for easy mounting inside existing pump cabinets.
- **Water Resistant Controller**
The ECLIPSE Controller case is water resistant. The Controller telephone-type jacks are well protected from sources of potential water damage.
- **Security**
All dispenser programming is protected by a three-digit password. Once you assign your own password, access to Program Mode is only possible if you know the password or return the Controller to Nova Controls for clearing.

Principle of Operation

The ECLIPSE dispenser **“Machine Interface”** is connected to the **“Controller.”** This communicates a “supply signal” that is derived from the laundry machine programmer at predetermined times in the wash formula. When a signal is received, the ECLIPSE will inject specific product(s) at that time. Typically, there should be at least three “supply signals” from the laundry machine for complete automatic control of each product.

The ECLIPSE is designed for laundry machines typically found in an On Premise Laundry (OPL) type account. Products are pumped by the dispenser from their shipping containers to the laundry machine. Each product injection may be delayed up to 999 seconds, and programmed for amounts up to 29.9 ounces (995 ml.). Up to 8 formulas may be programmed for selection with the Controller.

The **“Machine Interface,”** installed inside the laundry machine control wiring area, receives the laundry machine “supply signals.” It automatically adjusts for supply signal voltages ranging from 24 to 240VAC or 22 to 24VDC.

The **“Upgrade Kit Pump Interface Printed Circuit Board”** operates on 115 VAC/60 Hz, 220 VAC/60 Hz, or 230 VAC/50 Hz. It is wired into the appropriate voltage power supply. Power supply voltage is distributed to connected pump motors as controlled by the Controller. It also supplies low voltage power to the “Controller” and provides a 24 VAC output for the optional “Flush Manifold.”

The **“Controller”** indicates which formula is currently selected. The laundry operator can change formulas to match the load, review the load counter for each of the eight formulas and, if required, prime each of the pumps from the Controller.

The **“Optional Flush Manifold”**—not shown in the Eclipse System Diagram—provides an alternative means of chemical transfer to the laundry machine. In flush configuration, the ECLIPSE is a complete, integrated water flush chemical dispensing system.

Warning 	The Eclipse system is intended to be installed by experienced installers, in accordance with all applicable electrical and plumbing codes. All dish machine and dispenser power must be disconnected during installation and/or any time the dispenser cabinet is opened.
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2

Installation and Setup

Preplanning the Controller Installation

The following factors should be considered when choosing an installation location:

- Verify that there is access to the appropriate power source. Locate the power cable close to a suitable electrical outlet.
- The Controller must be mounted securely on (or close to) the laundry washer or other convenient location so that the operator can easily see the screen and operate the buttons.
- The Controller may be mounted on a horizontal surface, such as the top of the washer, or on a vertical surface, such as the front of the washer. Mount the Controller with self-adhesive velcro hooks or with the nuts and allen bolts provided.
- For flush installations, allow room underneath Pumpstand for a flush manifold, water valve, and related plumbing.

NOTE 	Controller installation instructions are provided in the Eclipse Controller reference manual.
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Machine Interface Installation

WARNING 	Disconnect power to the wash machine before proceeding. Keep Machine Interface and communication cable away from high voltage wires and relays. NEVER parallel the cable with high voltage lines.
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Mounting Machine Interface (MI)

The MI may be externally mounted inside an external electrical junction box, where required. Examine your Machine Interface to determine which style is included with your system, then choose the installation instructions that are appropriate for your Machine Interface (see *Figure 1 “Machine Interface Styles and Installation Instructions”* on page 2-4).

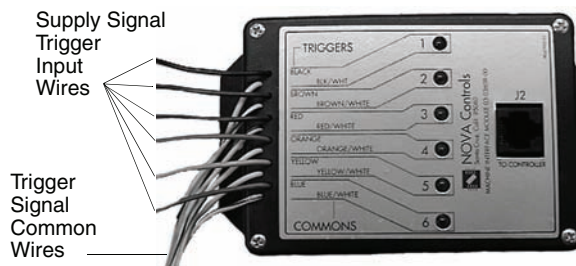
Note 	Electrical wiring junctions for supply triggers are to be done inside the junction box. See “Supply Trigger Wiring” on page 2-4 for connection information.
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Machine Interface – Rear Signal Wires



1. Route MI signal wires through 1/2 inch knock-out on washer (within the wiring area.)
2. Use lock nut on MI 1/2 inch nipple to secure MI to washer.
3. Route J2 cable to controller.
4. Plug J2 cable into Machine Interface.
5. Bundle excess J2 cable outside the washer.
6. Connect the other end of the J2 cable into the J2 connector on the Controller.

Machine Interface – Front Signal Wires



1. Fasten MI to washer chassis either within the wiring area or within an externally mounted junction box.
2. Route J2 cable to controller.
3. Plug J2 cable into Machine Interface.
4. Bundle excess J2 cable outside the washer.
5. Connect the other end of the J2 cable into the J2 connector on the Controller.

Figure 1 Machine Interface Styles and Installation Instructions

Signal Voltage

CAUTION 	Always verify all voltage sources with a meter.
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The Machine Interface will work with any signal voltage between 24 – 240VAC or 22 – 24VDC. With DC signals, polarity must be observed. Common is negative. The signals should 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. Use appropriate terminal connectors to connect the signal wires to the Machine Interface wires. Use these color codes for equivalent pump numbers:

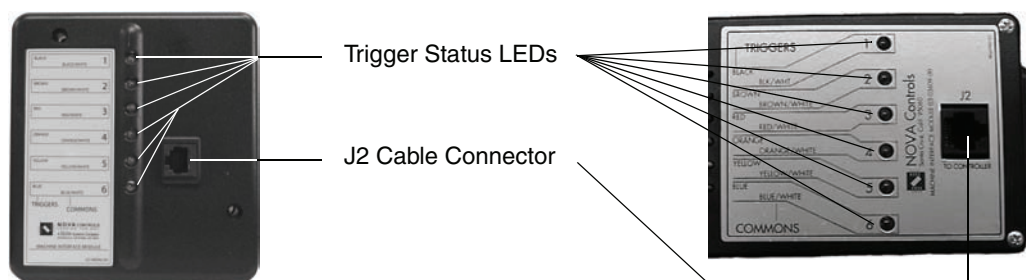
	Supply Signal	Signal Common	Pump Number
Signal 1	Black wire	White/Black	Pump 1
Signal 2	Brown wire	White/Brown	Pump 2
Signal 3	Red wire	White/Red	Pump 3
Signal 4	Orange wire	White/Orange	Pump 4
Signal 5	Yellow wire	White/Yellow	Pump 5
Signal 6	Blue wire	White/Blue	Pump 6

Trigger Signal Wiring Notes:

- If one or more pump signals are not used, they do not need to be connected.
- If you are triggering more than one pump from a single signal, connect all of the Machine Interface pump signal wires for those pumps to that signal.
- Tape off or wire nut unused wires. If washer has a single common, wire nut all commons together.
- Each of the 6 LEDs on the MI lights up when the corresponding valid signal is received.

Rear Signal Wire Style MI

Front Signal Wire Style MI



NOTE: Signal input wires are not shown in this illustration.

Figure 2 Machine Interface LEDs and J2 Cable Connection

Pump Interface Circuit Board Installation

Install the PI Circuit Board (on provided mounting plate) inside the dispenser cabinet being upgraded.

Pump Interface Mechanical Installation

1. Mark mounting plate screw hole locations using the mounting plate as a template.
2. Drill marked locations.
3. Attach the mounting plate to the dispenser with hardware provided.
4. Affix wiring label to inside of upgraded unit for future reference.

Pump Interface Electrical Installation

1. Connect the J1 Cable to the J1 connector on the Controller. (See *Figure 3 “Pump Interface Electrical Installation”* on page 2-6.)
2. Configure power input terminal jumpers for incoming line voltage:
 - **115 VAC Wiring:** connect one jumper from terminal 1 to terminal 2, connect another jumper from terminal 3 to terminal 4.
 - **208/230 VAC Wiring:** connect one jumper from terminal 2 to terminal 3.
3. Connect main AC power to terminals 1 and 4 of the Pump Interface Circuit Board power terminal block. Wire the provided fuse and fuse holder in series with one of the incoming legs of AC power.

CAUTION



Input power voltage must match dispenser pump motor voltage and power input jumper configuration. Adequate gauge power wire **MUST** be used or dispenser malfunctions may occur.

If in doubt, consult with an electrical code handbook and/or an electrician.

4. Connect color coded pump motor wires to appropriate dispenser pump motors, as shown below:

Pump Motor	Wire color
1	Black wires
2	Brown wires
3	Red wires
4	Orange wires
5	Yellow wires
6	Blue wires

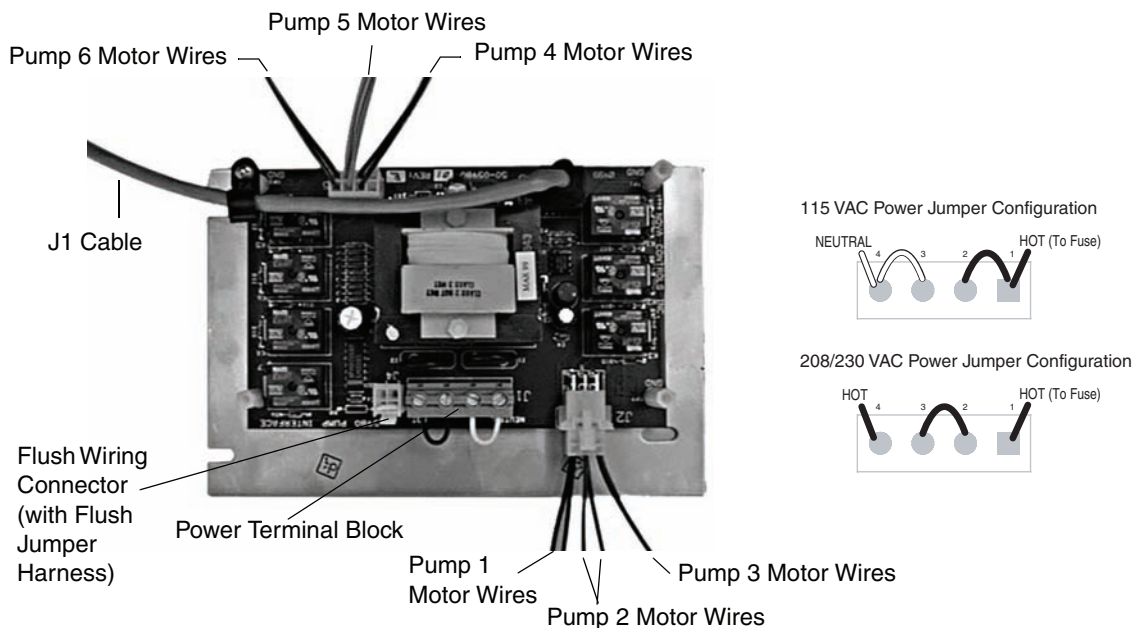


Figure 3 Pump Interface Electrical Installation

Flush Manifold Connection (optional)

The flush manifold wiring connector is located on the PI circuit board next to the power input wiring terminal block. Remove the flush jumper harness from the flush manifold wiring connector and replace it with the flush manifold connecting harness (see *Figure 3, above*).

The flush manifold connecting harness is labeled with two connectors for the flow (or pressure) switch (white wires) and two connectors for the flush manifold 24 VAC solenoid valve (red wires).

CAUTION 	Misconnection of the flush manifold solenoid valve and flow switch wires can cause damage to the printed circuit board and/or flow switch.
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Setup and Operation

Refer to the Controller reference manual for Controller operating and programming instructions.

Select a formula, start washer, and observe a test load to that ensure all products dispense only when they are supposed to dispense.

3

Troubleshooting

Troubleshooting Basics

When troubleshooting for “No Product On Signal,” always confirm pump calibration and formula amounts are correctly programmed in the Controller.

Note 	The most important first step in troubleshooting the dispensing system is to confirm the reported failure or symptom.
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We advise that you keep an inventory of the following new or "known good" spare parts to use for substitution purposes when troubleshooting (or you can borrow components from an adjacent dispensing system):

- Controller
- Pump Interface PCB
- Wiring Harness Plate Assy.
- J1 Cable
- Machine Interface (with J2 Cable)

Confirm J1 and J2 Cable Integrity

Always ensure that all telco connectors (J1 and J2 Cables) are clean and corrosion free. Also examine cables for cuts or kinks which can indicate broken wires. When in doubt, replace defective cables.

Flush Manifold Connection & Safety Interlock

When using the ECLIPSE with the optional Flush Manifold Kit, water flow is sensed whenever the Controller calls for water flush. If no flow is sensed, or water flow falls below .65 GPM, all pumps will shut down. This provides a safety interlock in the event of low water flow or other water flush system failures. Refer to the *Flush Manifold Installation & Operation Manual* for more information regarding the Flush Manifold option.

Note 	A flush jumper harness is present at the flush connector on the Pumpstand. For flush operation, remove this jumper and connect the Flush Manifold Connecting Harness in its place. (Retain the flush jumper harness for possible future use.) Pumps will not run without either the flush jumper harness or a functioning Flush Manifold connected.
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Troubleshooting Guide

SYMPTOM	OBSERVATION / CHECK	CAUSE	CURE
Dead, no display	1. No power to unit. 2. No power to PI PCB. 3. Power OK, no Controller display.	1. No power at source. 2. Blown power fuse. 3. Tripped or defective pumpstand circuit breaker. 4. Defective PI PCB, J1 Cable, or Controller.	1. Restore Power. 2. Replace fuse. 3. Reset, or replace, pumpstand circuit breaker. 4. Substitute components, one at a time.
No pumps run on Prime or on signal	1. Check flush connector. 2. Check J1 Cable connections. 3. Check components.	1. No contact closure at flush connector. 2. Damaged J1 Cable. 3. Defective PI PCB, J1 Cable, or Controller.	1. Reconnect Flush Jumper Harness (non-flush) or troubleshoot flush system flow switch. 2. Replace J1 Cable. 3. Substitute components, one at a time.
Some pumps run, some pumps do not run on Prime or on signal.	1. Check motor wire connections. 2. Check J1 Cable connections. 3. Check components.	1. Loose motor wire connection. 2. Damaged J1 Cable. 3. Defective PI PCB, J1 Cable, or Controller.	1. Reconnect loose motor wire connection. 2. Replace J1 Cable. 3. Substitute components, one at a time.
One or more pumps do not run on signal, but all pumps Prime OK.	1. Confirm Pump Calibration. 2. Confirm supply signal is at MI (observe LED and/ or measure with meter). 3. If Pump Interlock is on, is this the first signal set for this pump? 4. Check J2 Cable connections and components. 5. Check formula programming.	1. Pump(s) not calibrated. 2. Washer not sending signal, or signal wire loose. 3. Pump Interlock only allows dispenser to recognize first signal for each pump in a load. 4. Damaged or defective J2 Cable, MI, or Controller. 5. Formula(s) or calibration incorrect.	1. Calibrate pump(s). 2. Repair washer, reprogram washer, reconnect signal wire(s). 3. Reset Controller (turn power off, then on). 4. Replace J2 Cable. Substitute components, one at a time. 5. Confirm pump calibration and formula amounts. Re-calibrate first, then re-program.
Not counting loads.	1. Check that the "Count Pump" runs. (Count Pump = highest pump number in a formula with a non-zero amount programmed.) 2. Check formula programming.	1. "Count Pump" not running. 2. Amount programmed in a pump that is not signaled to run.	1. Troubleshoot per above. 2. Reprogram washer supply signals and/or dispenser Controller formulas.

4 Parts

Replacement Parts

The following spare parts listing is to be used as a guide to order spare and/or repair parts. Part numbers are subject to change without notice. When ordering, please state part number and description.



Item No.	Description	Part No.
1	Pump Interface Printed Circuit Board (PI PCB), 115 VAC	13-05980-01
*	Pump Interface Printed Circuit Board (PI PCB), 208/230 VAC	13-05980-02
2	Controller, SAE Units	01-05970-00
*	Controller, Metric Units	01-05970-01
3	Machine Interface Module with J2 Cable, 7.5 ft. (2.3 meter)	03-03609-02
4	Flush Jumper Harness (for non-flush installations)	40-06266-00
*	Pumps 1, 2, 3 Motor Plug (with wires)	40-06182-00
*	Pumps 4, 5, 63 Motor Plug (with wires)	40-06183-00
*	J1 Cable, 15 foot (4.6 meter)	13-05516-150
*	J1 Cable, 30 foot (9.2 meter)	13-05516-300
*	J1 Cable, 45 foot (13.7 meter)	13-05516-450
*	J1 Cable, 60 foot (18.3 meter)	13-05516-600
*	J1 Cable, 75 foot (22.9 meter)	13-05516-750
*	J2 Cable, 7.5 foot (2.3 meter)	13-07492-075

* Denotes items not shown.

5 Specifications

Note 	Specifications subject to change without notice.
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Dimensions, Mounting Plate	
Size	7.5" Wide X 2.75" High (includes J1 Cable) X 5.0" Deep 19.0 cm Wide X 7.0 cm High (includes J1 Cable) X 12.7 cm Deep
Weight	
Power Requirements	
Total Amperage draw during operation (4 pumps running at one time)	115 VAC (+/- 10%), 60 Hz. 9.4 amps. 208 VAC (+/- 10%), 60 Hz. 5.2 amps. 230 VAC (+/- 10%), 50 Hz. 4.7 amps.
General	
Number of pumps that may run at one time	Non-Flush = all Flush = 1 at a time (pumps will queue when more than one is triggered at the same time)
Maximum Pump Amount	29.9 oz. (995 mls)
Maximum Pump Delay Time	999 seconds
Maximum Flush Time	999 seconds
Maximum Pump Prime Time	5 minutes
Load Count Pump	Highest pump number in each formula with a non-zero amount programmed
Maximum J1 Cable Length	75 feet (22.86 meters)
Temperature	10° to 49° C (50° to 120° F) (max.)

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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.

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