
KNIGHT

IDEX

IDEX CORPORATION



On-Premise Pro Relay Instruction Manual

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Equipment Ratings

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

1. Pollution degree 2;
2. Installation category 2;
3. Altitude 2000 m;
4. Humidity 50% to 80%
5. Power supply 100 - 240 VAC, 2.0 A, 50/60 Hz
6. Indoor use only;
7. Temperature 5°C to 40°C;
8. Mains supply voltage fluctuations are not to exceed 10 percent of the nominal supply voltage;

Electrical Ratings

- Chemical dispensing pumps, Models OP-PRO, permanently connected, rated 100 - 240 VAC, 2.0 A, 50/60 Hz
- Replacement on I/O Board: 2Amp, 250V, 6.3x32mm, Fast-Acting
- Replacement on PCB inside SIB Module: 0.5Amp, 250V, 6.3x32mm, Fast-Acting

Approvals mark:  



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.

INTRODUCTION

The On-Premise Pro Relay was designed to meet today's laundry chemical injection needs with economy and flexibility in mind. Advanced microprocessor technology makes the OP-Pro Relay one of Knight's least expensive laundry injectors.

The On-Premise Pro Relay is a two component system, with each component performing a specific function. See diagram below for illustration of the following:

- (1) The **Signal Interface Module (SIB)** receives supply signals from the washmachine.
- (2) The output circuit board located inside the pump cabinet then runs the pumps for the correct amount of time based on the signal duration.

FEATURES

- Flush mode can be used with a flush manifold
- Optional flush manifold with solenoid provides single line diluted chemical injection
- The signal input circuitry will accept and verify a signal that is in the range of 24 to 240 volts



PRE-INSTALLATION

Before the equipment is installed, you should survey the installation site thoroughly. At the very least, your survey should include the following:

- Check to make sure that all functions of the washmachine are operating properly. Including; card reader or timer, water solenoids, flush down valves, water level switch, machine motor, and drain valve.
- Check the proposed location for a 100 to 240 VAC power source.
- Check voltage of all supply signals that will be used from the washmachine. Measure voltage between supply signal and signal common with a voltmeter. DO NOT check signal voltage between supply signal and case (earth) ground.
- Measure the distance from chemical supply containers to pump housing, and from pump housing to injection point inside washmachine.

INSTALLATION

- (1) **Disconnect all power to washer.**
- (2) Mount pump cabinet in a convenient location no higher than 8' above, and within 10' horizontally, of supply containers. This is usually near the washer, however dispenser can be mounted as a remote pumping system.
- (3) Connect 100 to 240 VAC power source to main power connection in pump cabinet. Use suitable conduit for electrical wiring (per applicable wiring codes). NOTE: Low voltage cables do not require conduit.
- (4) Install and wire the **Signal Interface Module (SIB)** per notes to the right.
- (5) For each pump, cut the suction tube to length and insert one end into the appropriate supply container using PVC pipe as a support. Insert other end of suction tube into the left (input) side of the pump's squeeze tube.
- (6) For each pump, cut the discharge tube to length and insert one end into the right (output) side of the pump's squeeze tube. Form an anti-siphon loop (pointing "down") with the other end of discharge tube and insert into the supply pocket of the machine.
- (7) The system is now ready to be powered up and operated.

SIGNAL INTERFACE MODULE (SIB):

The SIB receives supply signals from the washer, then communicates with the dispenser to run the pumps. The low voltage cable allows a quick, clean connection from the module to the pump system without requiring conduit.

- (1) Mount the module using the provided Dual Lock adhesive strip. The module can be mounted inside the washer's controls, along side the washer's controls, or to the bottom of the pump cabinet.
- (2) Connect the low voltage cable from the module to the OP-Pro Relay pump system.
- (3) Connect the supply signals to the SIB per wire colors on the SIB label.
- (4) If you have one signal common (typical) connect the common to "COM A" on the SIB. If you have two signal commons, you will need to remove a resistor inside the SIB before connecting the common wires! See the following details.

Splitting signal commons:

- (1) Remove the four screws from the bottom of the SIB to open the module.
- (2) Locate the three resistors marked R1, R2, and R4, on the left side of the module (each resistor has a single black band).
- (3) Cut and remove the resistor that will "split" the commons between the desired pumps. Be sure to remove only one resistor.

CUT RESISTOR	TO USE COM A FOR PUMPS	AND COM B FOR PUMPS
R2	1, 2	3, 4, 5, 6
R1	1, 2, 3	4, 5, 6
R4	1, 2, 3, 4, 5	6

- (4) Close the module and replace the four screws when finished.

OPERATION

The intended use of the relay system is for washmachines that are microprocessor controlled. The pumps will run for as long as their respective signals are present, therefore all chemical dosages are set at the washer.

- Ensure that DIP switch #1 is set to RELAY for the system to operate correctly.
- There is a one second qualifying time for relay systems. Example; If the pump needs to run for 10 seconds, the signal duration must be set for 11 seconds.
- Pressing the prime buttons will allow each pump to run for as long as the respective button is pressed. The flush output also has its own prime button to allow the flush to be manually activated as needed.

FLUSH MANIFOLD (OPTIONAL)

If the system will be used with an optional flush manifold, install the manifold per the instructions that came with it. To enable the flush function, move DIP switch #3 to the FLUSH ON position.

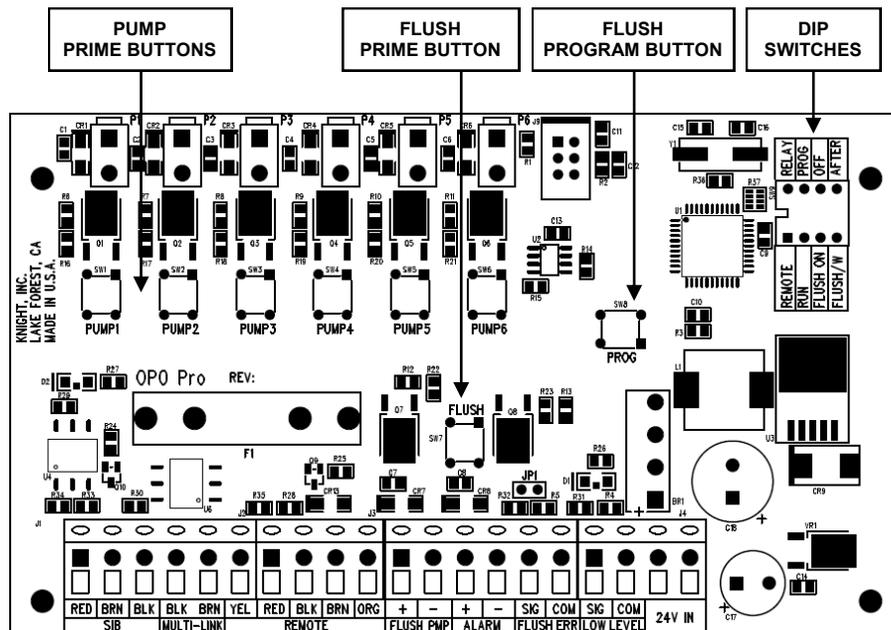
Setting flush run time:

- (1) Dispense a small amount of colored chemical into manifold by using the manual pump prime buttons.
- (2) Move DIP switch #2 to PROG, then press the PROG button. The flush solenoid will activate the water flow.
- (3) Once all colored product has been cleared from the line to the washer, press PROG again to stop the water flow.
- (4) Move DIP switch #2 back to RUN, then choose the flush mode you want as described below.

Choosing flush mode:

If you chose “with”, the flush will activate simultaneously during the operation of any pump(s). When the pumps finish running, the flush will remain active and begin counting down its own programmed run time.

If you chose “after”, the flush will not activate until the pumps finish running, then the flush will activate and begin counting down its own programmed run time.



TROUBLESHOOTING

Power indicator does not come on:

- Check fuse on circuit board inside dispenser — replace if necessary.
- Check voltage at power input terminals inside dispenser — refer to wiring diagram.

Pumps do not trigger from signals:

- Check signal voltage and duration.
- Check the SIB connection to the pump unit.

Pumps will not turn when trying to prime, or during a washcycle:

- Check for loose pump motor wires.
- Check for voltage from circuit board to motor.
- Check for mechanical binding of moving parts.

Pumps run but do not dispense product:

- Check product containers.
- Check squeeze tube for wear.
- Check condition of roller and pump housing.
- Check for air leaks on suction line.
- Check for blockage from pump tube into flush manifold (if used).

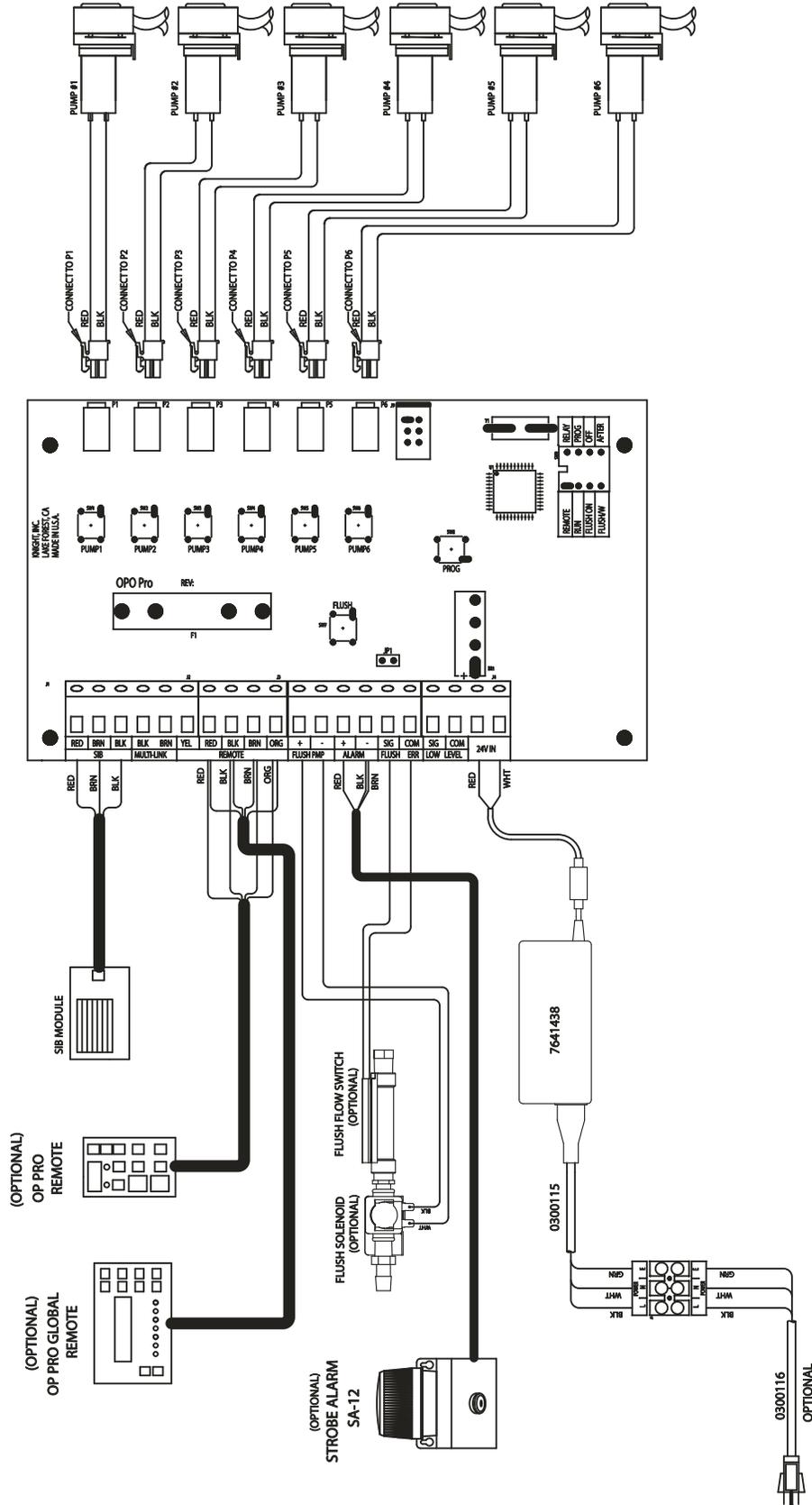
Pumps trigger more than once during cycle:

- Check supply signal input for repeat signals from washmachine.

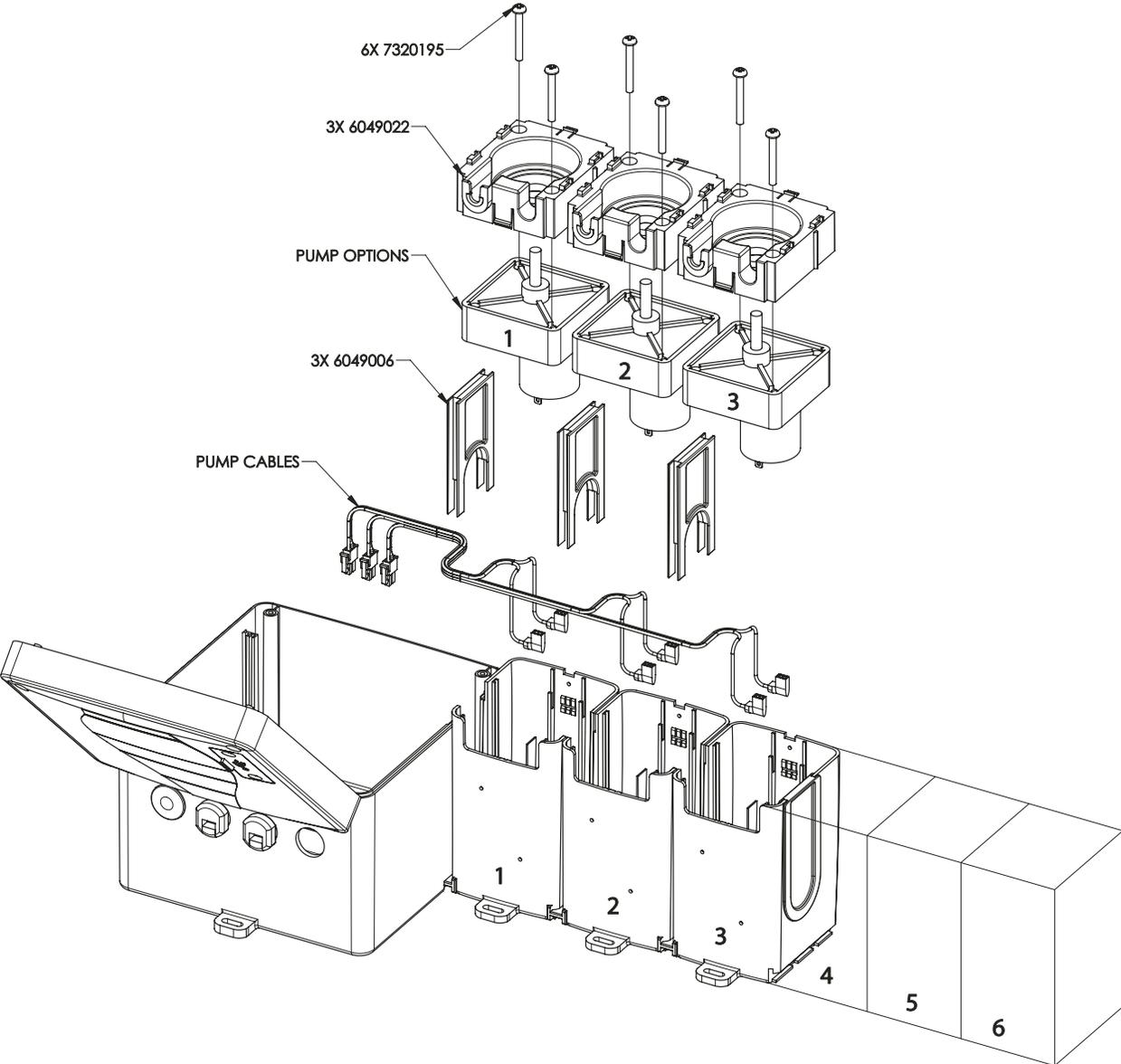
All pumps run at the same time.

- Check signals from washmachine.

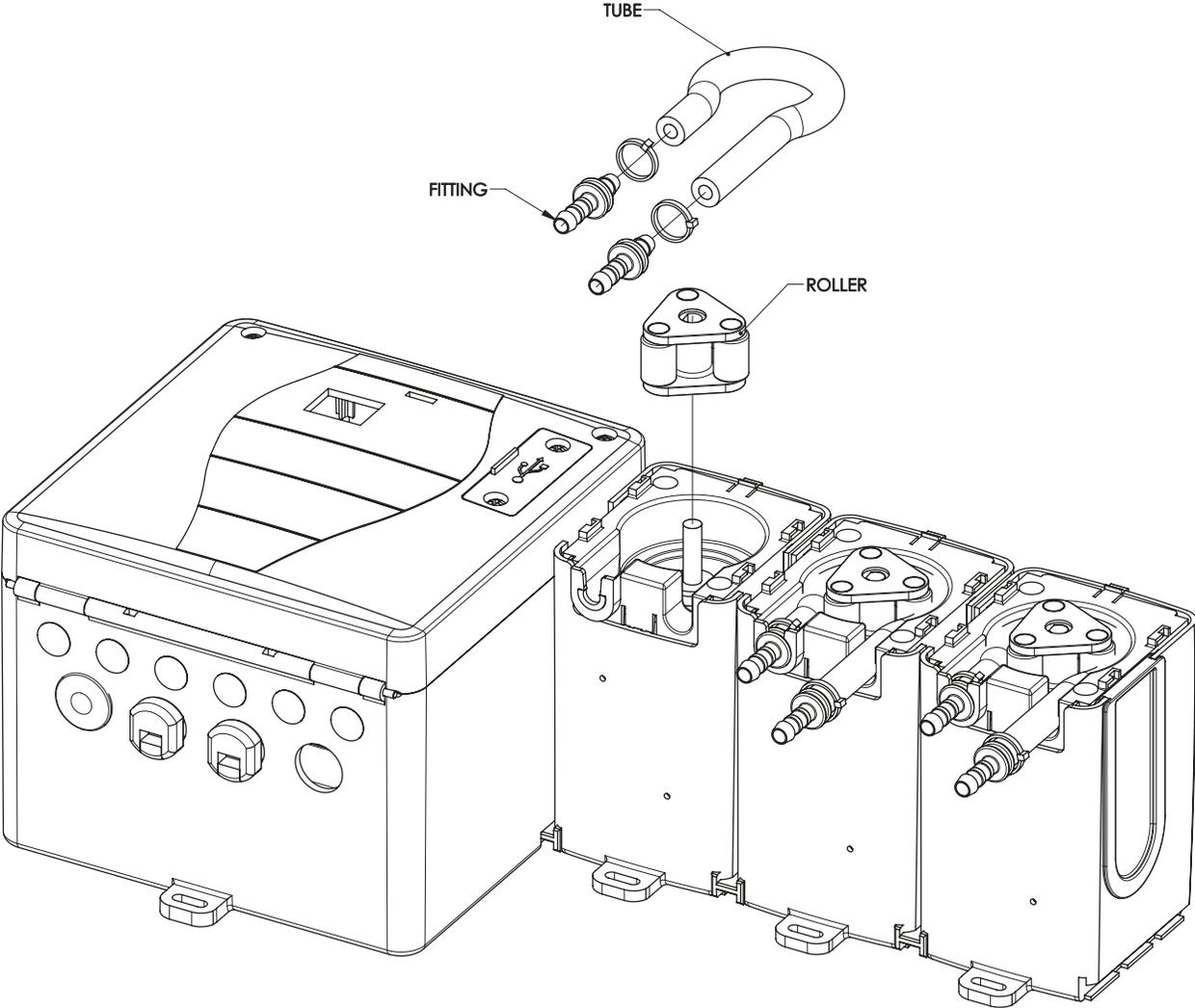
SYSTEM WIRING DIAGRAM



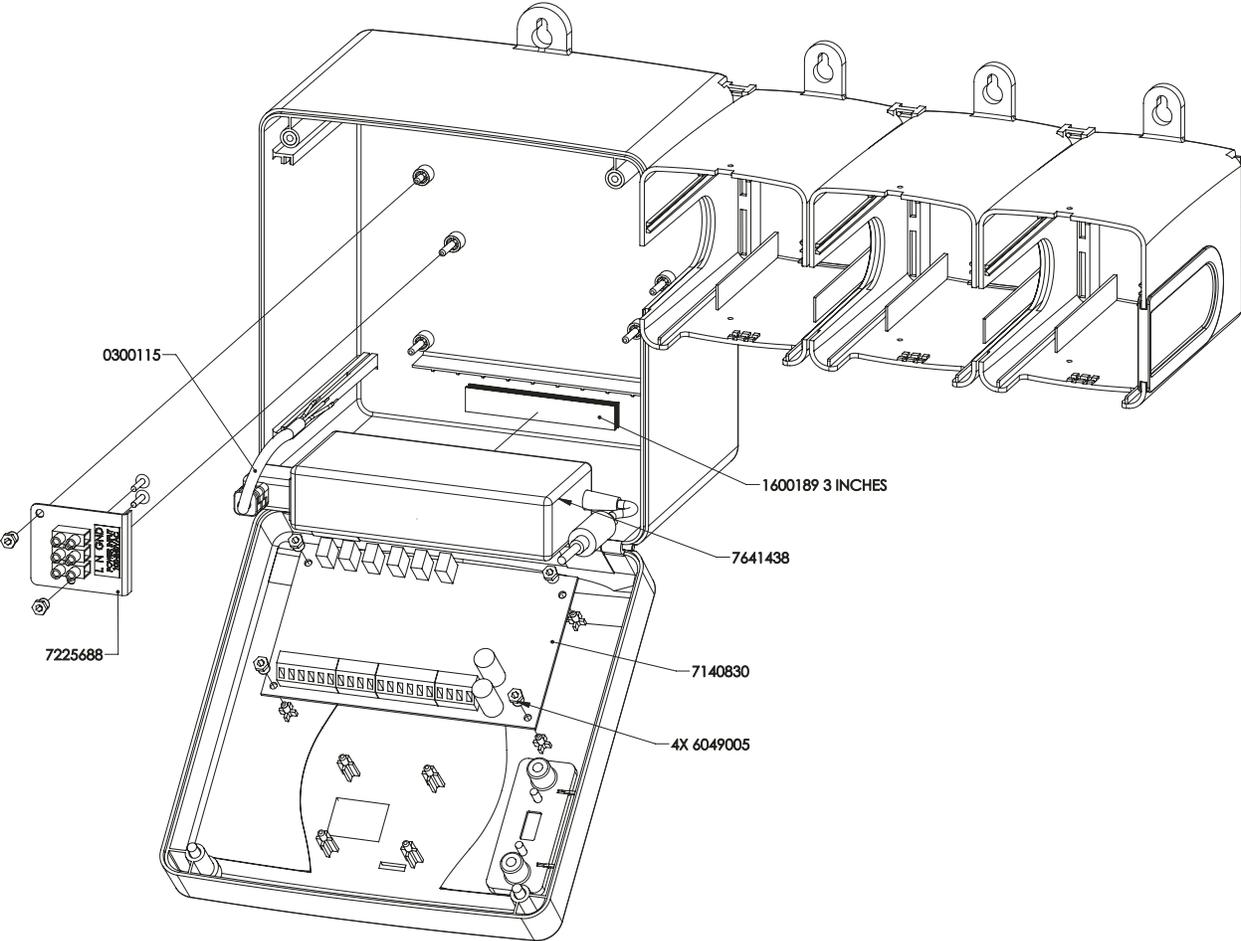
SYSTEM PARTS DIAGRAM

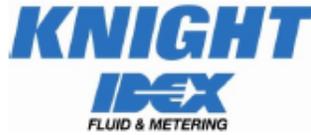


SYSTEM PARTS DIAGRAM



SYSTEM PARTS DIAGRAM





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EC – Declaration of Conformity

We declare that the product listed below, to which this Declaration of Conformity relates, is in conformity with the Standards and other Normative Documents listed below:

Equipment Description: Laundry Chemical Dosing System
Type/Model Number: On-Pro series (On-Premise Pro)

Low Voltage Directive - 2006/95/EC (and former Directive 73/23/EEC)
Standards to which Conformity is Declared:

Electrical Safety IEC 61010-1 (2nd Ed). EN 61010-1 (2nd Ed) - Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements.

For Information: The "Electrical Safety Test" took place at the CSA International, Irvine, CA, U.S.A

Electromagnetic Compatibility
EMC Directive - 2004/108/EC and former Directive 89/336/EEC as amended by 92/31/EEC and 93/68/EEC
Standards to which Conformity is Declared:

EMC Emissions: CISPR 11: Industrial, scientific and medical (ISM) radio-frequency
EN 55011: Equipment - Radio disturbance characteristics - Limits and methods of measurement

EN 61000-3-2: Limits for harmonic current emissions
EN 61000-3-3: Limitation of voltage changes, voltage fluctuations and flicker in public

EMC Immunity: EN 61326-1: 2006 Electrical Equipment Measurement, Control & Laboratory Use (Normal Environment)
EN 61000-4-2: Electrostatic discharge immunity test
EN 61000-4-3: Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4: Electrical fast transient/burst immunity test
EN 61000-4-5: Surge immunity test
EN 61000-4-6: Immunity to conducted disturbances, induced by radiofrequency fields
EN 61000-4-11: Voltage dips, short interruptions and voltage variations immunity test

For Information: The "Electromagnetic Test" took place at the Aegis Labs., Lake Forest, CA, U.S.A

Certification Marking:

We declared that the equipment specified above conforms to the referenced EU Directives and Harmonized Standards."

Signature: Date: 11/22/2013
Name: John Chiechi Title: Director of Engineering

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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