



# INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

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No. 0580001032 (0A.0)

## **RKHO/RKHO.120/RKHO.240/RKHO.120P/ RKHO.JH Hands-Off (HO) Retro-Fit Kit**

**NOTE TO INSTALLER: Please leave this information with the Maintenance Department.**

**CAUTION!** Prior to making any electrical connections, verify with a voltmeter that power from the service panel is **off**.

### **LIMITED WARRANTY**

HAWS® warrants that this specific product is guaranteed against defective material or poor workmanship for a period of **one year from date of shipment**. HAWS liability under this warranty shall be discharged by furnishing without charge F.O.B. HAWS Factory any goods, or part thereof, which shall appear to the Company upon inspection to be of defective material or not of first class workmanship, provided that claim is made in writing to Haws within a reasonable period after receipt of the product. Where claims for defects are made, the defective part or parts shall be delivered to the Company, prepaid, for inspection. HAWS will not be liable for the cost of repairs, alterations or replacements, or for any expense connected therewith made by the owner or his agents, except upon written authority from HAWS, Sparks, Nevada. HAWS will not be liable for any damages caused by defective materials or poor workmanship, except for replacements, as provided above. Buyer agrees that HAWS shall not be liable for general, special, or consequential damages claimed to arise under the contract of sale. The drinking fountain manufactured by HAWS is warranted to function if installation and maintenance instructions provided are adhered to. The units also must be used for the purpose for which they were intended.

**NO OTHER WARRANTIES EXPRESSED OR IMPLIED ARE AUTHORIZED,  
PROVIDED OR GIVEN BY HAWS.**

**SHOULD YOU EXPERIENCE DIFFICULTY WITH THE INSTALLATION OF THIS  
MODEL PLEASE CALL:**

**TECHNICAL SUPPORT: 1-800-766-5612**

**FOR CUSTOMER SERVICE: 1-888-640-4297**

**RECOMMENDED TOOLS:** Spanner wrench (Haws pn 0006983506, not supplied) and Phillips head screwdriver.

**MAINTENANCE:** Periodically clean the strainer (if one is used with your drinking fountain).

## INSTALLATION PROCEDURE

### NOTES:

1. **For all plastic push-in type fitting connections, only connect NSF-61 copper or plastic tubing. Stainless steel or glass tubing is not recommended. The following assembly instructions must be followed to ensure a watertight connection:**
  - a. Cut tubing square and clean.
  - b. Mark from end of tube the length of insertion (See table below).
  - c. Push tube into the fitting until it bottoms out.
  - d. To remove, depress collet and pull tubing out.

Tube Sizes	O.D. Tolerance	Insertion Depth
1/4"	±.005"	11/16"
3/8"	±.005"	3/4"
1/2"	±.005"	7/8"

- STEP 1:** Remove access plate. Turn off water supply. Disconnect tubing from 5874 Push Button and use Spanner Wrench (Haws pn 0006983506, not supplied) to remove valve.
- STEP 2:** Connect supply tubing to solenoid valve inlet, customer will have to provide connector that fits their inlet tubing, solenoid valve connection is 1/4" NPT. Use existing 3/8" OD tubing to connect solenoid valve outlet to regulator valve inlet. Connect regulator valve outlet to bubbler tubing.
- STEP 3:** Wire cable harness to sensor, solenoid, and transformer per Cable Wiring Diagram. Secure wires using supplied cable ties and tie mounts.
- STEP 4:** Use sensor mounting hardware to secure sensor to the hole for the 5874 Push Button. Ensure the sensor is oriented upright, based on verbiage on back of sensor.
- STEP 5:** For the RKHO.120P Plug-In transformer kit, plug the 24 VAC transformer into a duplex receptacle. For all others, wire the transformer to appropriate power, either 120 or 240 VAC depending on transformer kit choice, per NEC/CEC and Local Code. (Please Note: Transformers must be installed such that they will be protected from direct contact with water.) Connecting power will initiate the sensor's "Start-up

mode.” The HO Sensor will take approximately one to five (1 to 5) minutes to complete its full cycle of self-calibration. It is important that no object is within 36” of the front of the sensor during this time. When calibration is complete, the red light will shut off.

- STEP 6:** If the 24 VAC power supply is interrupted for more than fifteen (15) seconds, the “start-up mode” will automatically repeat itself when power is restored.
- STEP 7:** If the indicator light flashes three (3) times quickly, then three (3) times slowly and continues to repeat this sequence, this indicates incorrect wiring or a short in the 24 VAC power supply.
- STEP 8:** When someone remains standing in front of the sensor for more than thirty (30) seconds, the sensor will automatically shut off the water supply to the bubbler. To restart, stand to the side for a moment; then return to a position in front of the sensor.
- STEP 9:** Turn water supply on and adjust the bubbler’s flow using the black regulator mounted inside bracket that has HO sensor unit (clockwise adjustment increases flow / counterclockwise decreases flow). Finally, check fountain for leaks.

## **SENSOR/SOLENOID TROUBLESHOOTING GUIDE**

- STEP 1:** A loud click indicates when the solenoid valve is turned on. If valve clicks, but no water comes on, make sure screwdriver stop (recommended to be supplied by customer to shut off water for repairs) is wide open. If valve clicks but still no water, check valve or line for obstruction. If valve does not click when hand is placed a few inches in front of sensor, go on to next step. **DO NOT ATTEMPT TO DISASSEMBLE SENSOR; DAMAGE WILL RESULT.**
- STEP 2:** Using voltmeter, check for 24 VAC across the transformer terminals. Replace transformer if faulty.
- STEP 3:** Check solenoid valve. Voltage rating on valve top plate should be 24 VAC. Unplug sensor from wiring harness. Using a voltmeter check for 24 VAC signal from wiring harness (use hand in front of sensor to activate). Replace solenoid valve if necessary. Valve coil may be checked for continuity using an ohmmeter. Disconnect valve from wiring harness and sensor wires. Connect each valve lead to a meter lead. One meter lead should be plugged into meter ground socket and one should be plugged into socket marked “Ohm”. If resistance is near infinity or zero, solenoid valve is bad. Replace solenoid valve.

**STEP 4:** Check wiring harness. If wiring harness appears to be hooked up correctly, disconnect harness from valve, sensor, and power cord, then check harness for continuity using ohmmeter. Resistance between connectors attached to each other by wires should be near zero Ohms. High resistance indicates a faulty connector or wire. There should be infinite resistance between separate (independent) legs of the wiring harness. Less than infinite resistance indicates a short or cross connection. If wiring harness has proper continuity and is hooked up properly, proceed to Step 5.

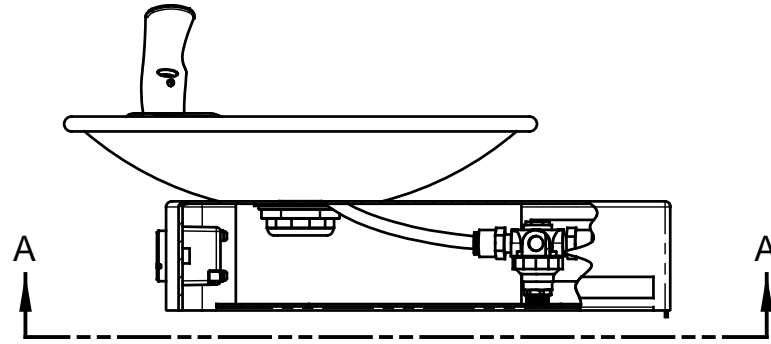
**STEP 5:** Check sensor. If Steps 2, 3, and 4 all check out okay, the sensor is probably the problem. The sensor acts pretty much like a simple relay or switch. The SCR (semiconductor relay) within the sensor will not fully switch without a 6 to 11 Watt load such as a solenoid valve or household light bulb. For this reason, a simple ohmmeter test on a good sensor, which is not connected to the proper load, will yield misleading results seemingly indicating improper function. Replace sensor if necessary.

<b>SENSOR/SOLENOID TROUBLESHOOTING</b>	
<b>PROBLEM</b>	<b>REPAIR CHECKLIST</b>
1. Insufficient bubbler flow.	<ul style="list-style-type: none"> <li>a. Check that screwdriver stop is wide open.</li> <li>b. Direction can be counterclockwise or clockwise depending on style of shut-off valve.</li> <li>c. Verify minimum 30 psi supply pressure.</li> <li>d. Clean inlet strainer (if one is present).</li> </ul>
2. Repeated clogs in strainer (if one is present).	<ul style="list-style-type: none"> <li>a. Install water filter in supply line.</li> </ul>
3. Continuous bubbler flow.	<ul style="list-style-type: none"> <li>a. Solenoid valve sticking. Clear obstruction or replace valve.</li> <li>b. Continuous light on sensor (no blinking), indicates sensor is sticking. Replace sensor.</li> </ul>
4. Bubbler does not activate.	<ul style="list-style-type: none"> <li>a. Check wiring harness. Replace if necessary.</li> <li>b. Check solenoid valve with 24 VAC. Replace if necessary.</li> <li>c. Replace sensor.</li> <li>d. Check transformer for 24 VAC at output terminals; replace if necessary.</li> </ul>

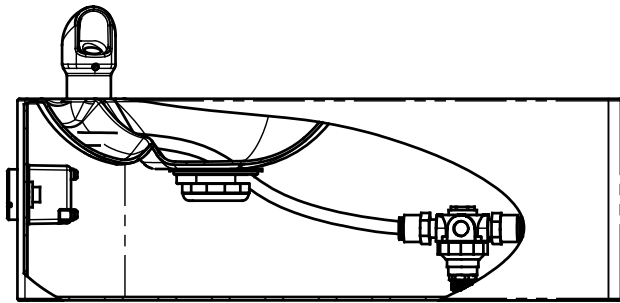
NOTES:

- RKHO RETROFIT KITS ALLOW THE FOLLOWING INDOOR FOUNTAINS TO BE CONVERTED FROM A HAWS 5874 PUSH BUTTON VALVE TO HANDS-OFF (TOUCHLESS) OPERATION:  
 1001, 1001HPS, 1001HPSMS, 1001MS, 1011, 1011HPS, 1011HPSMS, 1011MS  
 1105, 1107L, 1109, 1109.14, 1117L, 1117LN, 1119, 1119.14  
 H1001.8, H1001.8HPS, H1011.8, H1011.8HO, H1011.8HPS, H1107.8, H1109.8, H1117.8, H1119.8  
 1920, 1920HPS, 1920W  
 FOUNTAINS MAY BE MOUNTED ON THE EXTERNAL WALL OF A BUILDING PROVIDED THE TRANSFORMER SHALL BE MOUNTED INSIDE THE WALL AND PROTECTED FROM WATER AS SHOWN IN THIS INSTALLATION PER NEC/CEC AND LOCAL CODE.
- RETROFIT KIT MODELS:  
 RKHO: INDOOR HO RETRO-FIT KIT (INCLUDES HO SENSOR WITH MOUNTING HARDWARE, SOLENOID VALVE AND REGULATOR - SEE SHEET 2).  
 RKHO.120: 120VAC IN-WALL TRANSFORMER KIT FOR INDOOR USE (INCLUDES TRANSFORMER AND MAIN POWER HARNESS - SEE SHEET 3).  
 RKHO.240: 240VAC IN-WALL TRANSFORMER KIT FOR INDOOR USE (INCLUDES TRANSFORMER AND MAIN POWER HARNESS - SEE SHEET 3).  
 RKHO.120P: 120VAC PLUG-IN TRANSFORMER KIT FOR INDOOR USE (INCLUDES TRANSFORMER AND MAIN POWER HARNESS - SEE SHEET 3).  
 RKHO.JH: OPTIONAL JUMPER HARNESS KIT (SEE SHEET 3).
- UP TO THREE (3) FOUNTAINS / BOTTLE FILLERS MAY BE POWERED BY ONE (1) TRANSFORMER.

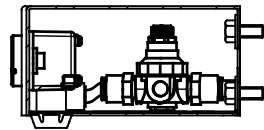
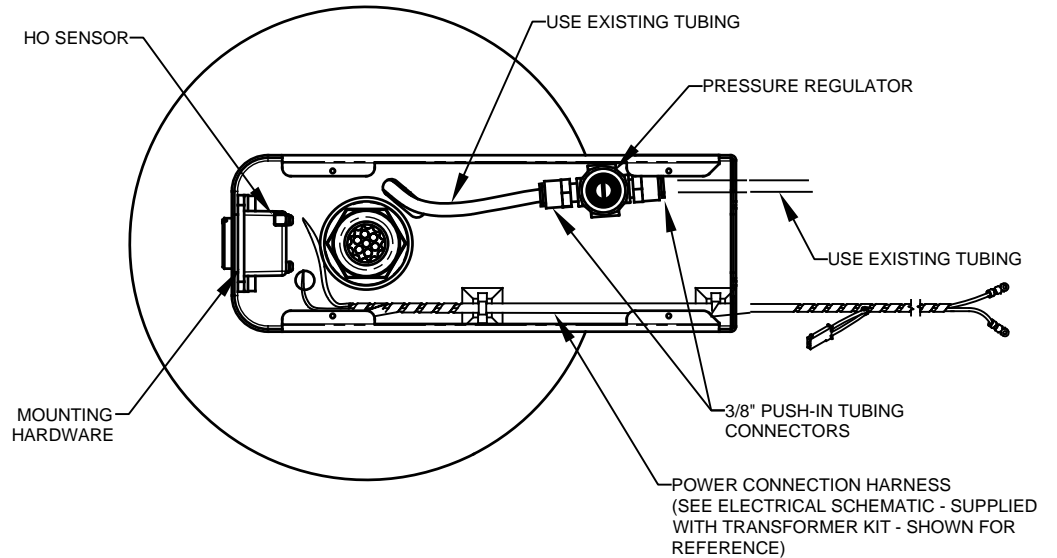
(NOTES CONTINUED ON SHEET 5)



EXAMPLE 1001 FOUNTAIN INSTALLATION



EXAMPLE 1109 FOUNTAIN INSTALLATION

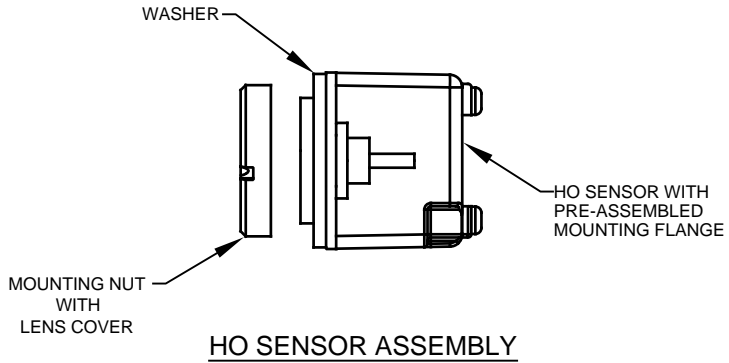
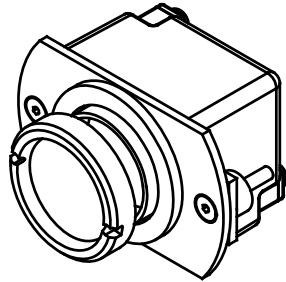


EXAMPLE 1920 BOTTLE FILLER INSTALLATION

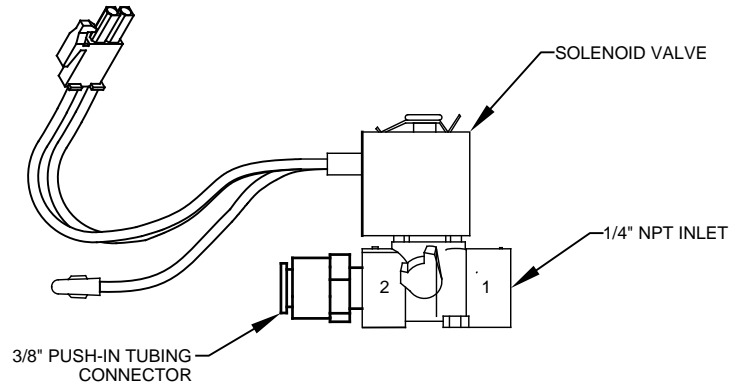


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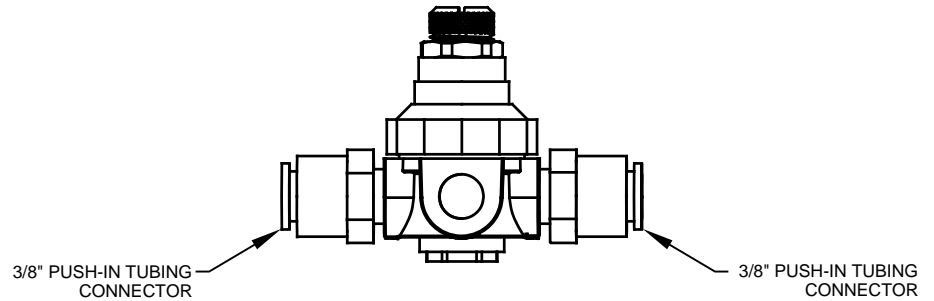
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DRAWN: BM/FV	DATE: 07/07/20	CHKD.:	REVISION 0A.0	
APPROVED:	DATE:	SCALE: N/A	DRAWING TYPE: INSTALLATION	SIZE: A SHEET 1 OF 5



HO SENSOR ASSEMBLY



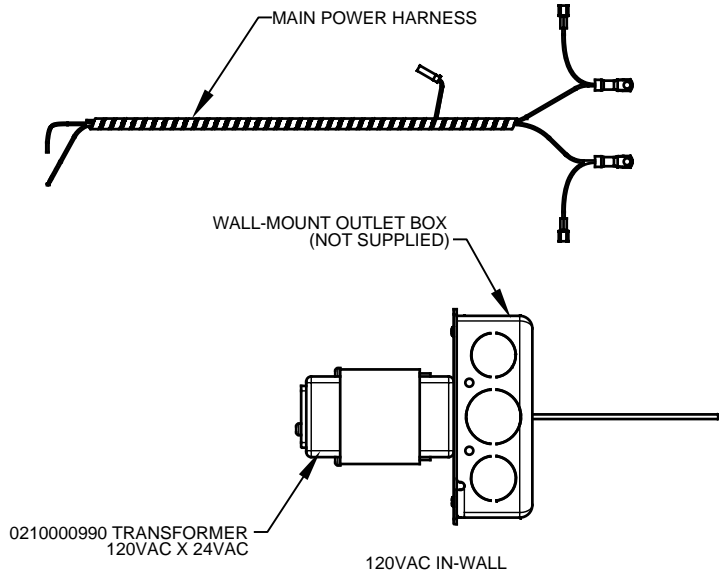
SOLENOID VALVE ASSEMBLY



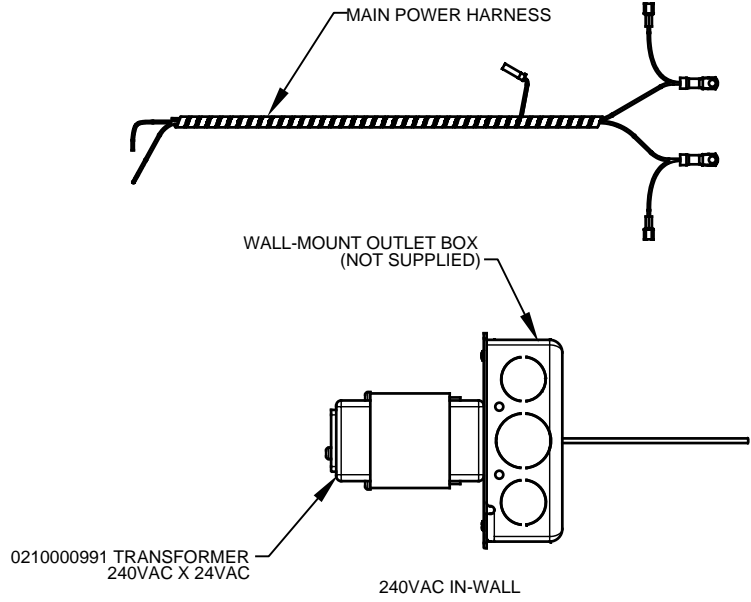
VALVE REGULATOR

RKHO KIT - MAIN PARTS

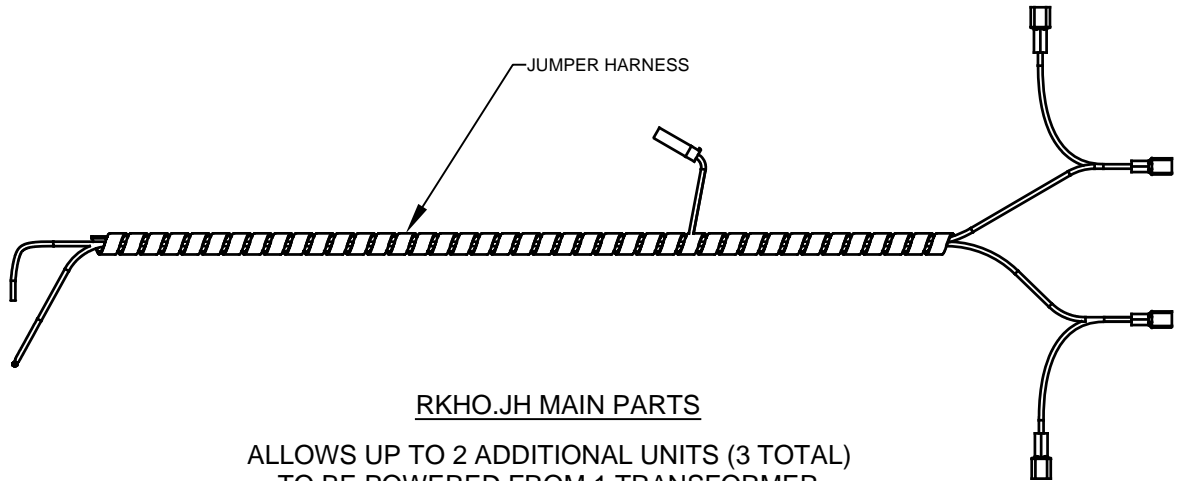
		<b>Haws</b> <sup>®</sup>		1455 KLEPPE LANE SPARKS, NEVADA 89431 (775) 359-4712 FAX (775) 359-7424 E-MAIL: HAWS@HAWS.CO.COM WEBSITE: WWW.HAWS.CO.COM	
ECN NO. 5562	REVISED PER ECN: 5562	BY: FV	MODEL(S)		PART NUMBER
DRAWN: BM/FV	DATE: 07/07/20	CHKD.:	RKHO & RKHO.120 & RKHO.240 & RKHO.120P & RKHO.JH		0580001032.D
APPROVED:	DATE:	SCALE: N/A	DRAWING TYPE: INSTALLATION	SIZE: A	REVISION 0A.0
					SHEET 2 OF 5



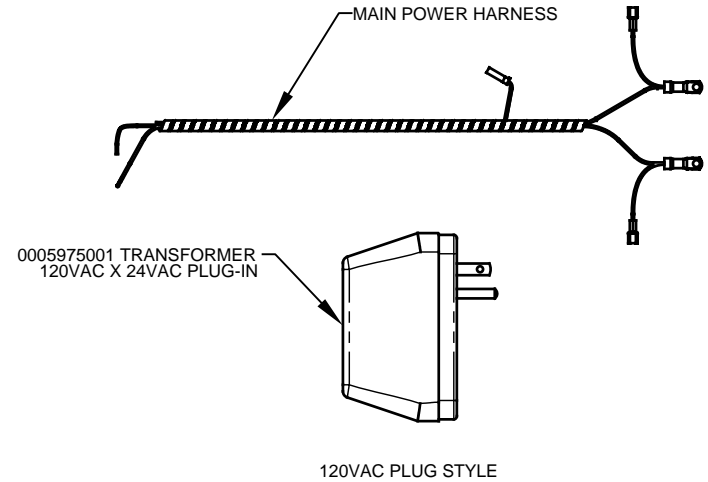
**RKHO.120 MAIN PARTS**



**RKHO.240 MAIN PARTS**



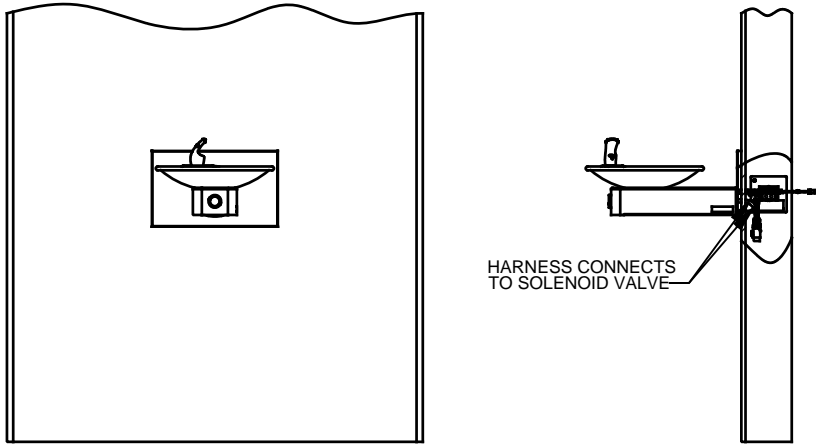
**RKHO.JH MAIN PARTS**  
 ALLOWS UP TO 2 ADDITIONAL UNITS (3 TOTAL)  
 TO BE POWERED FROM 1 TRANSFORMER



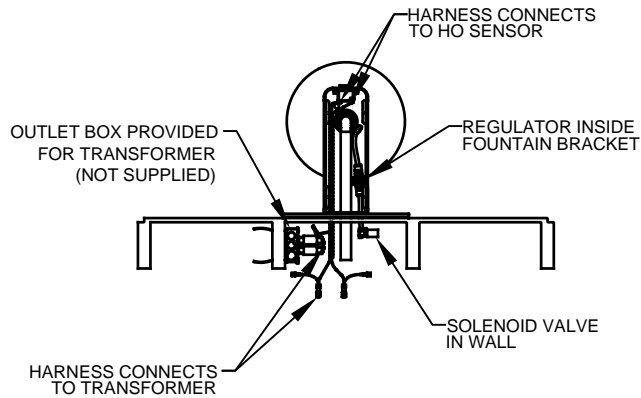
**RKHO.120P MAIN PARTS**

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ECN NO. 5562 DRAWN: BM/FV APPROVED:	REVISED PER: ECN: 5562 DATE: 07/07/20 DATE:	BY: FV CHKD.:	MODEL(S) RKHO & RKHO.120 & RKHO.240 & RKHO.120P & RKHO.JH SCALE: N/A   DRAWING TYPE: INSTALLATION   SIZE: A
PART NUMBER 0580001032.D REVISION 0A.0			SHEET 3 OF 5

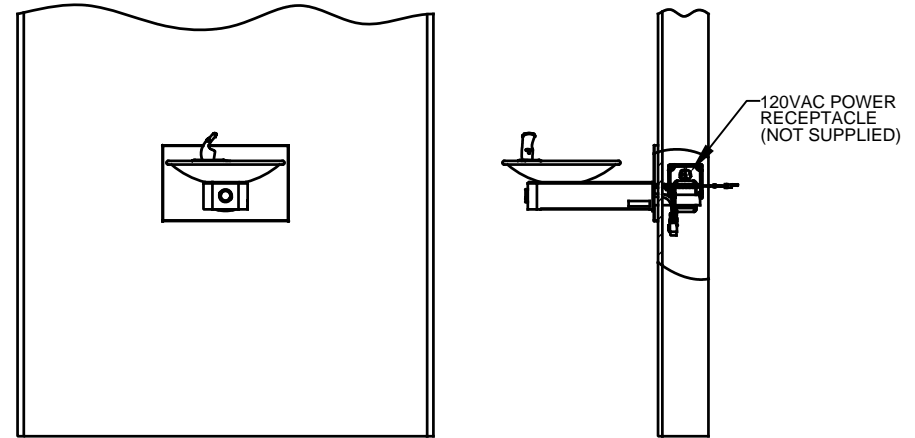
## WALL MOUNT TRANSFORMER INSTALL EXAMPLE



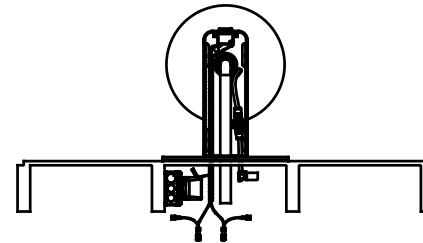
FOR ELECTRICAL CONNECTIONS SEE ELECTRICAL SCHEMATIC ON SHEET 5



## PLUG-IN TRANSFORMER INSTALL EXAMPLE



SAME AS WALL MOUNT EXCEPT THAT POWER RECEPTACLE IS REQUIRED FOR TRANSFORMER

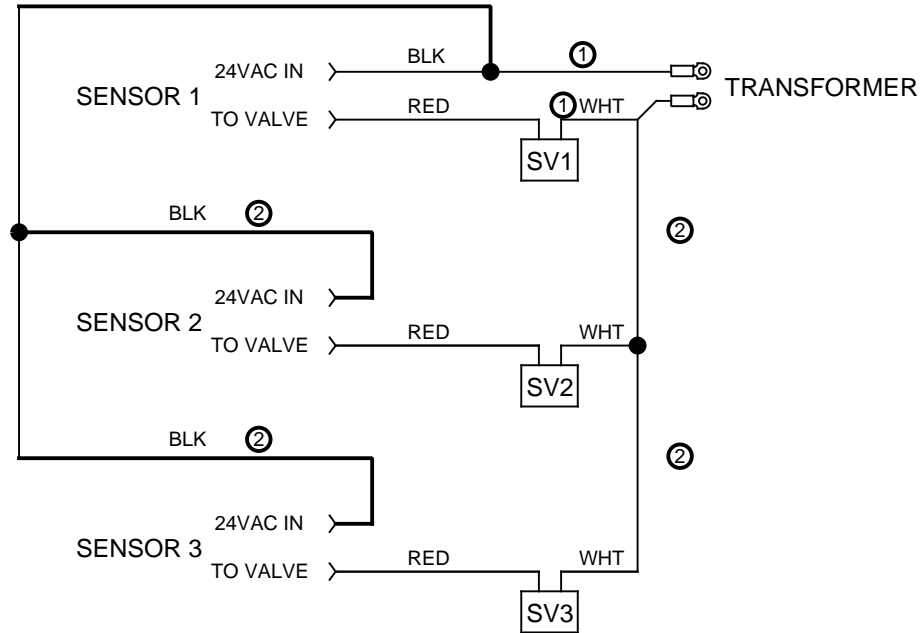


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		ECN NO. 5562 DRAWN: BM/FV APPROVED:	REVISED PER: ECN: 5562 DATE: 07/07/20 DATE:
		PART NUMBER 0580001032.D REVISION 0A.0	SCALE: N/A DRAWING TYPE: INSTALLATION SIZE: A SHEET 4 OF 5



NOTES (CONTINUED FROM SHEET 1):

4. RKHO.120 AND RKHO.120P REQUIRE 120VAC POWER CONNECTION.
5. RKHO.240 REQUIRES 240VAC POWER CONNECTION.
6. TRANSFORMERS MUST BE MOUNTED SUCH THAT THEY ARE PROTECTED FROM WATER.



CABLE WIRING SCHEMATIC

SCHEMATIC NOTES:

- ① MAIN HARNESS
- ② OPTIONAL JUMPER HARNESS (MAXIMUM OF 2 SHOWN HERE)

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		ECN NO. 5562 DRAWN: BM/FV APPROVED:	REVISED PER ECN: 5562 DATE: 07/07/20 DATE:
PART NUMBER 0580001032.D REVISION 0A.0			SCALE: N/A DRAWING TYPE: INSTALLATION SIZE: A SHEET 5 OF 5