Instructions

Hose Power Controller Kit

311510C

For replacing the AmpLok® Hose Controller on H-20/35 Pro Proportioners and HV-20/35 Proportioners.

Kit 297983

For 230V and 380V H-20/35 Pro and HV-20/35 Models equipped with an AmpLok® Hose Controller.

Kit 261287

For 460V H-20/35 Pro Models equipped with an AmpLok® Hose Controller.

Important Safety Instructions
Read all warnings and instructions in manuals 311392 and 311393.
Save these instructions.

PROVEN QUALITY. LEADING TECHNOLOGY.

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Contents

H-20/35 Pro Models

Installing this equipment requires access to parts that may cause electrical shock or other serious bodily injury if work is not performed properly. This work should be performed by a qualified electrician.

Refer to H-20/35 Pro Proportioner Service manual 311393 for current unit schematics.

Remove AmpLok® Controller

1. Remove power from unit. Switch the Main Disconnect to OFF.
2. Remove AmpLok® controller, see FIG. 1.
   a. Use 5/32 in. hex key wrench to remove four retaining screws.
   b. Pull controller down for easier access.
   c. Remove wires from all six terminals.
   d. Save two of the screws.

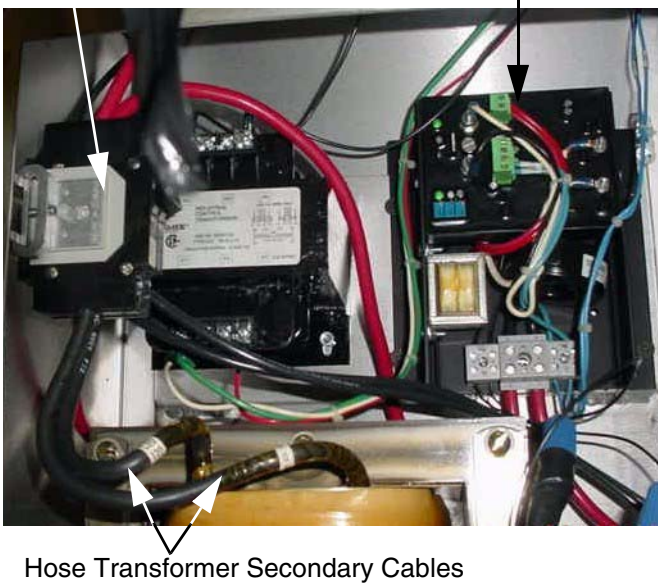

FIG. 1: H-20/35 Pro Before Conversion

3. Remove cables that are no longer needed.
   a. Remove the #6 red cable from top of circuit breaker that went to the AmpLok® controller.
   b. Disassemble large wire nuts and tape. Discard the two #16 black cables that went to the left two AmpLok® terminals. Discard wire nuts.

Install Hose Power Controller Kit

Mount Hose Power Controller

Mount new hose power controller to bracket using the following guidelines:

- Use the #8 nuts and washers provided.
- Controller fits between bent-up flanges, which mount in unit facing out.
- Fan hangs off end of bracket away from the two larger mounting holes.

Install Fan Power Wires

Install new wires to power fan on hose power controller.

1. If necessary, use a stiff wire to feed the two new wires from the lower compartment, through the middle (large) conduit, and to the upper control box. See FIG. 2.

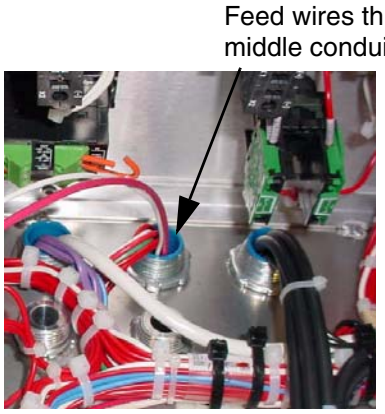

FIG. 2: H-20/35 Pro Upper Control Box - Conduit

2. Connect the red 2161 wire to a 2161 terminal. See FIG. 3.
3. Connect the white N wire to a neutral (N) terminal. See FIG. 3.

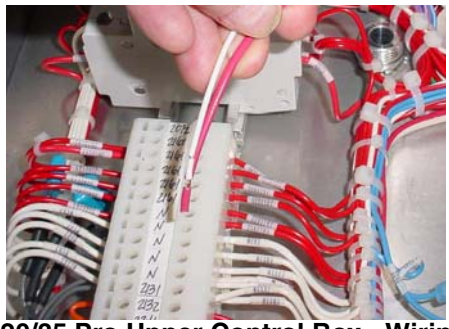

FIG. 3: H-20/35 Pro Upper Control Box - Wiring

4. Use wire ties to route new wires along existing bundles.

Wire Hose Power Controller

Refer to FIG. 8 and FIG. 9 for connection diagrams.

1. Place hose power controller and bracket in space next to the hose power transformer.
2. Connect two black 8-gauge wires (previously connected to lower transformer wires with large wire nuts) to terminals #2 and #3 on top of hose power controller. (These wires are 1252 and 1332.)

   380V Units Only: connect black 1252 wire to terminal #2, and white neutral wire to terminal #3.
3. Connect the two #0 transformer bottom wires (primary) to bottom of hose power controller terminal #5.
4. Connect the two #220 wires (#460 on 460V units) to terminal #6.
5. Plug in the red 2161 wire and white N wire to two terminal spades on fan of hose power controller. Use either terminal; terminals do not have polarity.
6. Connect the blue 3501 (+5 Vdc) wire to the top left terminal #7 on side of hose power controller.
7. Connect the blue 3502 wire to terminal #8, which is below terminal #7.
8. Connect the red #6 gauge hose cable that was connected to terminal 4 on the old controller to the open terminal on the hose secondary circuit breaker.
9. Install current sensor doughnut (part of hose power controller kit).
   - Disconnect #0 transformer secondary wire from circuit breaker.
   - Install sensor on #0 large transformer cable, and reconnect cable to circuit breaker.
   - Connect sensor black wire and white wire to terminals #15 and #16 on left side of hose power controller.
10. Ensure all cable connections are secure.

Mount Hose Power Controller and Bracket

Mount hose power controller and bracket to back wall using the following guidelines:

- Use the two screws saved from the AmpLok® controller.
- Clean up wire routings and tie wrap wires in place.
- Do not run wires over sharp edges of transformer frame.
- Do not run wires against coil of transformer.
- Reconnect heated hose if it was disconnected.

FIG. 4: Completed Installation - H-20/35 Pro

Power On and Test

1. Turn power on to unit. Switch the Main Disconnect to ON and switch the E-Stop to ON.
2. Turn on amber control power switch.
3. Adjust the hose temperature set point (SP1) on control panel above the actual temperature until the O1 output light on the display stays on constantly.
4. Turn on hose zone control switch (green light).
5. Test newly installed hose power controller. See FIG. 5.

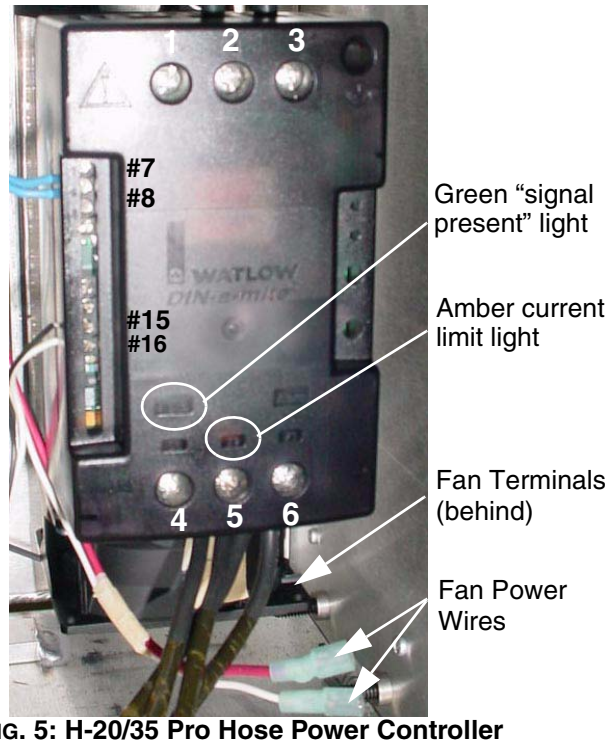

FIG. 5: H-20/35 Pro Hose Power Controller

- Ensure the green signal light above terminal #4 is on.
- Ensure the amber current limit light above terminal #5 is on.
- As the hose reaches temperature, the O1 output light will flicker less until it goes out completely. As this occurs, the amber light will flicker off slowly, and then the green light will flicker off slowly.

If you have a true RMS AC current meter, you can check one of the hose cables for 45 amps AC +/- 2a. while the O1 output light is steadily on. A non-true RMS AC current meter will read approximately 30 amps.

- Check voltage at lower hose circuit breaker between two hose cables. Keep in mind that voltage varies with hose length; approximately 11 Vac per 50 ft. of 3/8 in. bundle plus 1.5V for whip hose. If correct hose power is not detected, refer to **Troubleshooting**, page 8.

HV-20/35 Models

Installing this equipment requires access to parts that may cause electrical shock or other serious bodily injury if work is not performed properly. This work should be performed by a qualified electrician.

Refer to HV-20/35 Series Proportioning Unit with AmpLok® manual 63942-ID for unit schematics.

Remove AmpLok® Controller

1. Remove power from unit. Switch the Main Disconnect to OFF.
2. Remove AmpLok® controller. See FIG. 6 and FIG. 7.
   a. Remove lid from blue transformer box on bottom-front of unit.
   b. Disconnect wires from gray terminals 1-6 on AmpLok® controller.
   c. Remove nuts and washers from studs, and then remove AmpLok® controller.
   d. Remove large wire nut from secondary cable 0.
   e. Disconnect cables.

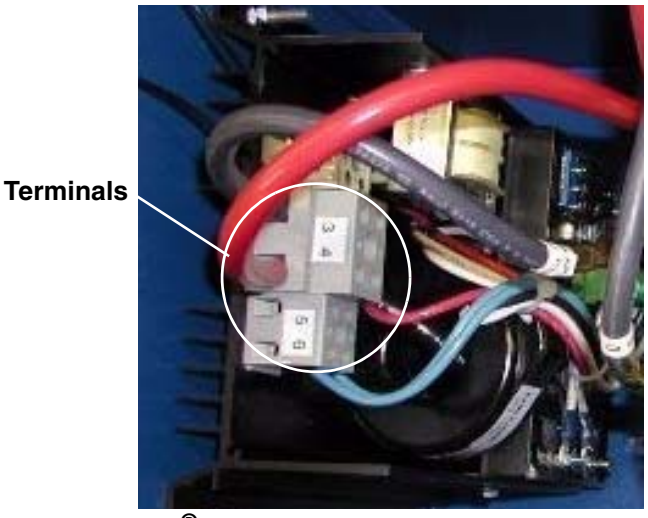

FIG. 6: AmpLok® Controller (HV-20/35)

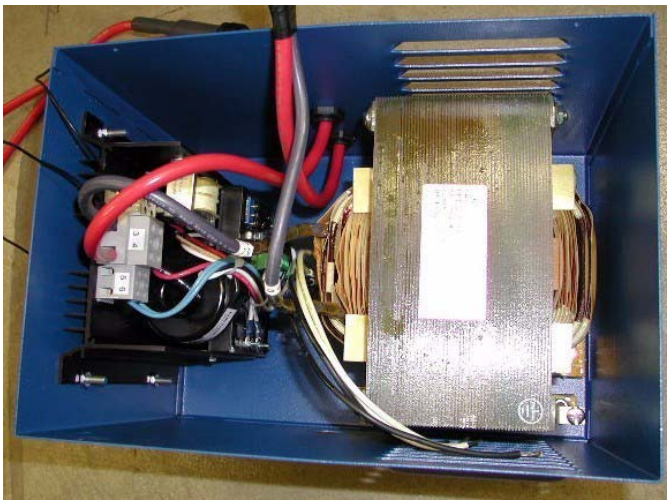

FIG. 7: HV-20/35 Before Conversion

Install Hose Power Controller Kit

Before you can install the new hose power controller kit, it must be positioned properly.

1. Position hose power controller in bottom of box facing up. Ensure it is positioned for easy wire access on top and left side of controller.
2. Mark through mounting feet for drill holes.
3. Drill through #29 (0.136 in.). Tap 8-32 screw threads.

Install Fan Power Wires

Install new wires to power fan on hose power controller.

1. Tape the two new wires (plain ends) to a piece of flexible steel wire. Route wires from the lower compartment, through the middle (large) conduit, and to the upper control box. See FIG. 2.
2. Route, tie wrap, and connect the wires to their respective terminal blocks.
3. Plug in the wires with push-on connectors into the fan terminals; terminals do not have polarity.

Wire Hose Power Controller

1. Connect power wire 1252 from top of control box to terminal #2.
2. Connect black wire 1332 (230V units) or wire N 10 ga.wht (380V units) to terminal #3.
3. Connect the two black transformer primary wires to terminal #5.
4. Connect the two white transformer primary wires to terminal #6.
5. Route one of the large 6-gauge transformer secondary wires through the D Current Sensor, which is included in the kit.
6. Connect the black 6-gauge transformer secondary wires to each red 6-gauge hose power cable with wire nuts supplied. Secure nuts with electrical tape.
7. Connect D Sensor doughnut wires to terminals #15 and #16. Polarity does not have any affect.
8. Connect blue 5 Vdc signal wires. Connect 3501 to terminal #7, and 3502 to terminal #8.
9. Ensure all cable connections are secure.

Mount Hose Power Controller and Bracket

Use screws and lockwashers provided in kit to secure hose power controller to bottom of control box.

Power On and Test

1. Turn power on to unit. Switch the Main Disconnect to ON and switch the E-Stop to ON.
2. Turn on amber control power switch.
3. Adjust the hose temperature set point (SP1) on control panel above the actual temperature until the O1 output light on the display stays on constantly.
4. Turn on hose zone control switch (green light).
5. Test newly installed hose power controller.
   - Ensure the green signal light above terminal #4 is on.
   - Ensure the amber current limit light above terminal #5 is on.
   - As the hose reaches temperature, the O1 output light will flicker less until it goes out completely. As this occurs, the amber light will flicker off slowly, and then the green light will flicker off slowly.

If you have a true RMS AC current meter, you can check one of the hose cables for 45 amps AC +/- 2a. while the O1 output light is steadily on. A non-true RMS AC current meter will read approximately 30 amps.

   - Check voltage at lower hose circuit breaker between two hose cables. Keep in mind that voltage varies with hose length; approximately 11 Vac per 50 ft. of 3/8 in. bundle plus 1.5V for whip hose. If correct power is not detected, refer to **Troubleshooting**, page 8.

Troubleshooting

Problem	Cause	Solution
No lights on hose power controller.	No 4.5 to 12 VDC signal from temperature controller	Make sure connection for 01 light on temperature controller is good.
	Polarity is reversed on 4.5 to 12 VDC.	Reverse blue wires.
	No power to hose power controller terminals 2 and 3; 220-240 VAC or 460 VAC on 460V models.	Make sure green light on hose switch is on. Make sure circuit breaker is on.
Green light on, but amber light not on.	Opening in hose circuit.	Disconnect main hose plug. Check for 0.4 - 6 Ω resistance. Make sure all hose connections are secure.
	Hose secondary circuit breaker open.	Check breaker. Check for continuity across breaker.
Hose power primary circuit breaker blows.	Current sensor doughnut not connected.	Check hose power controller connections 15 and 16.
	Hose cable not running through current sensor doughnut.	Check hose cable and reroute if needed.
	Hose power controller is set too high.	Contact Graco Technical Assistance.

Parts

Kit 297983

For 230V and 380V H-20/35 Pro and HV-20/35 Models

Part No.	Description	Qty.
120387	CONTROL, heater, 240V	1
15H611	BRACKET, mount, heater control	1
103229	SCREW, cap, SCH	4
157021	WASHER, lock, int	4
100284	NUT, hex, MSCR	4
15H646	WIRE, pair, fan	1
117722	NUT, wire	2

Kit 261287

For 460V H-20/35 Pro Models

Part No.	Description	Qty.
120404	CONTROL, heater, 480V	1
15H611	BRACKET, mount, heater control	1
103229	SCREW, cap, SCH	4
157021	WASHER, lock, int	4
100284	NUT, hex, MSCR	4
15H646	WIRE, pair, fan	1

Connection Diagrams

Hose Transformer Primary Wire Connections

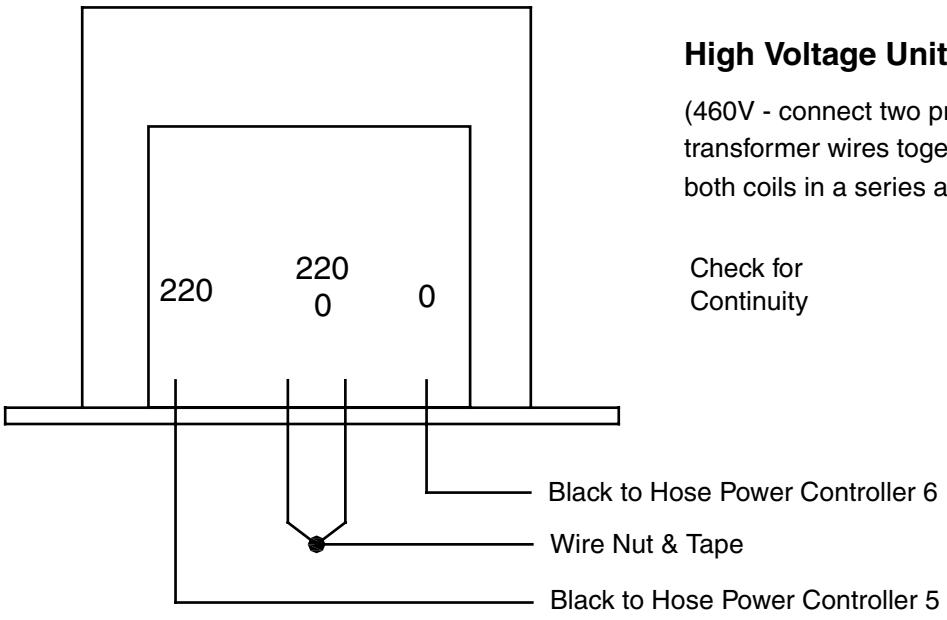

FIG. 8: Hose Transfer Connection Diagram for 460V Machines

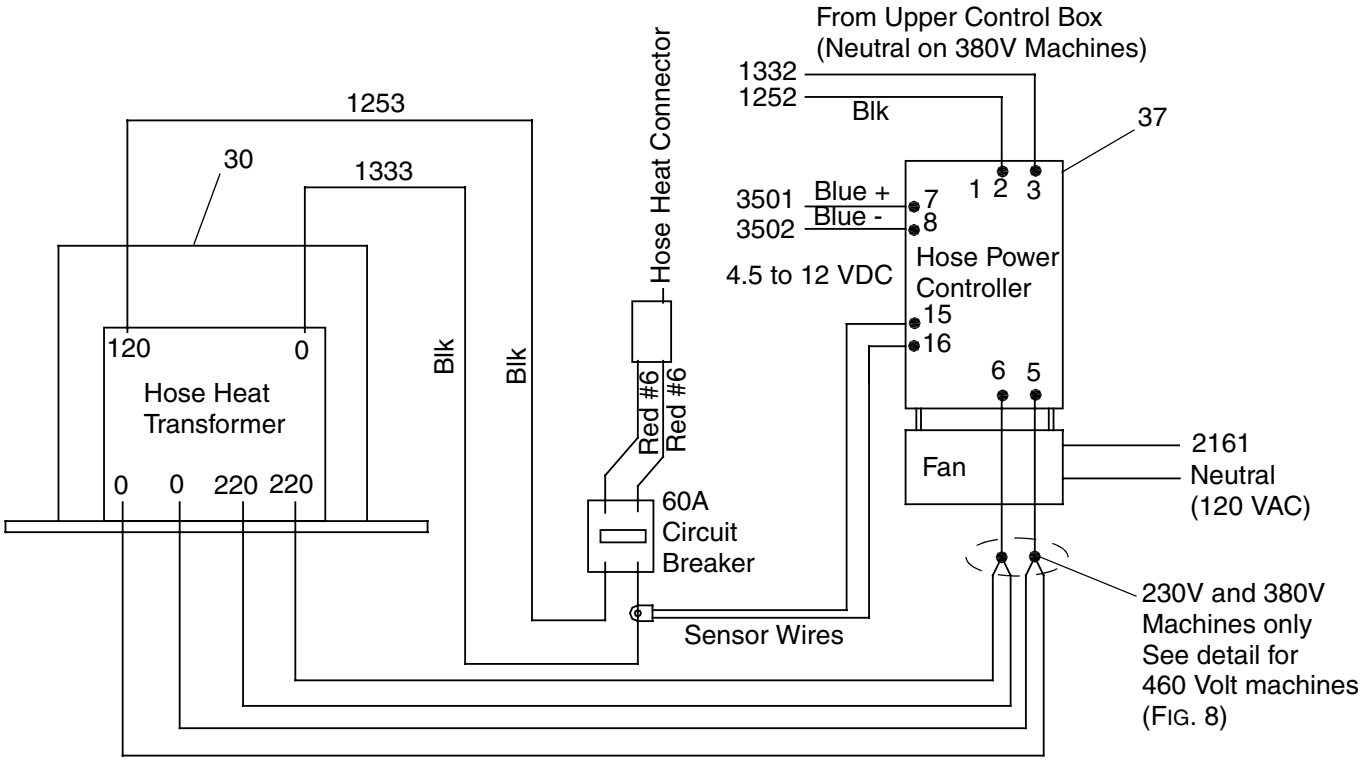

FIG. 9: Watlow Din-A-Mite Hose Power Controller Hook-Up Diagram

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

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Phone: 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

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