Cold Start Boiler Application

**Operation:** When any thermostat calls for heat, the appropriate circulating pump is energized and the isolated end switch (X and X) will start the boiler.

For Cold Start Boiler Application

**Priority Operation:** When the priority dip switch is set to ON and the priority zone is actuated, all other zones will stop operation until the priority zone is satisfied. When not switched to priority, all zones will operate independently.

**Mode Operation:** When the switch is set to NORMAL, the end switch relay will be energized if any zone is in operation. When the switch is set to RESET, the end switch relay will only be energized if the priority zone is in operation, or through the operation of a plug-in reset control.

**Primary Pump Operation:** When the switch is set to OFF, the primary circulating pump output will energize when any zone calls for heat, except the priority zone. When the switch is set to ON, the primary circulating pump output will energize when any zone calls for heat.

**Post Purge Operation:** When the switch is set to ON, the priority zone output will stay energized for 2 minutes after its thermostat or aquastat is satisfied, but not operate the boiler.

**Priority Protection Operation:** When the switch is set to ON and if the priority zone calls continuously for more than one hour, power is returned to all the other zones, allowing each zone to function independently. Once the priority zone is satisfied, the control's auto-reset is activated and the priority zone is again allowed to have priority for up to one hour starting from when it calls next.

**Pump Exercise Operation:** When the switch is set to ON, the solid state timer cycles all the circulating pumps that are attached to the Expandable Switching Relay at the selected time interval. The time interval can be set for the pumps to run for either 30 seconds every 2 weeks or 4 minutes every 24 hours.

**Low Limit (ZC) Operation:** When the switch is set to ON and the boiler drops below the set low limit (terminal ZC connected to boiler), all zone circulating pumps will stop. When the boiler rises above the set low limit, the zone circulating pumps are allowed to operate.

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Tankless Coil Boiler Application (Alternative Wiring)

**Operation:** When any thermostat calls for heat, the boiler will be enabled and appropriate circulating pump is energized when the boiler temperature is above the set low limit and low limit (ZC) dip switch is set to on.

**End Switches (Dry Contacts):** The main end switch closes when any zone thermostat calls for heat and the mode switch is set to NORMAL. The main end switch also closes when the mode switch is set to RESET and a PC Series boiler reset power control is calling for heat. The priority end switch closes only when the priority zone thermostat or aquastat is calling for heat.

**Expansion Connections:** Set the expansion switch to MASTER on the switching relay that has the designated priority zone or is utilizing the PC Series plug-in option. Set all other daisy chained controls to SLAVE. Using thermostat (18-22 gauge) connect between terminals A, B, C on the master control to the corresponding A, B, C on the SLAVE control(s). Controls may be daisy chained up to 20 zoning panels using any combination of -EX P controls (120 zones if all are 6 zone panels).

**Thermostat Input (24 vac):**
- **R** Hot side of transformer. Connect to R on thermostat.
- **W** Switched R signal from thermostat. Connect to W on thermostat.
- **C** Common side of transformer. Connect to COM on thermostat (optional).
- **NET** Network terminals 1 & 2 are tied together for wiring convenience when using communicating style thermostats (optional).

**120 VAC Connections (N is Neutral, H is Hot):**
- **Power Input** Connect 120 Volt AC power
- **Primary** Primary Pump (optional)
- **Zone 1-2** Circulator Zones
- **Priority Zone 3** Normally closed terminals for the Priority Zone.

**WARNING:** Wiring connections must be made in accordance with all applicable electrical codes. Use copper wire only. 120 VAC wiring must have a minimum temperature rating of 75°C. Failure to follow these instructions can result in personal injury or death and/or property damage. 12-18 gauge wire recommended for 120 VAC connections, 14-22 gauge wire for thermostat connections, and 14-22 gauge wire for 24 VAC source connections.

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**Specifications:**

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NUMBER</th>
<th>NUMBER</th>
<th>INPUT</th>
<th>COMBINED</th>
<th>MAXIMUM</th>
<th>TYPE 1</th>
<th>ENCLOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR503-EXP-4</td>
<td>3</td>
<td>1</td>
<td>120 VAC</td>
<td>12 A</td>
<td>1/2&quot;</td>
<td>M</td>
<td></td>
</tr>
</tbody>
</table>
| End switch connections are rated 24 VAC, 1 amp.

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For Tankless Coil Boiler Application (Alternative Wiring)

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For Both Cold Start Boiler Application and Tankless Coil Boiler Application (Alternative Wiring)

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For more wiring diagrams, visit [www.taco-hvac.com](http://www.taco-hvac.com).
**LIMITED WARRANTY STATEMENT**

Taco, Inc. will repair or replace without charge (at the company’s option) any product or part which is proven defective under normal use within three (3) years from the date of start-up or three (3) years from the date of purchase, whichever occurs first.

In order to obtain service under this warranty, it is the responsibility of the purchaser to promptly notify the local Taco stocking distributor or Taco in writing and promptly deliver the subject product or part, delivery prepaid, to the stocking distributor. For assistance on warranty returns, the purchaser may either contact the local Taco stocking distributor or Taco.

Any Taco product or part not installed or operated in conformity with Taco instructions or which has been subject to misuse, misapplication, the addition of petroleum-based fluids or certain chemical additives to the systems, or other abuse, will not be covered by this warranty.

No heat in a zone or room of building.

- **Problem:** No heat is present.
- **Solution:** Check the thermostat wiring for errors. If the red LED does not come on, then check the thermostat and thermostat wiring for errors.

Digital thermostats do not work correctly when connected to a switching relay.

- **Problem:** Digital thermostats do not work correctly when connected to a switching relay.
- **Solution:** Use a resistor to compensate for the switching relay.

Resistor (1KΩ, ½ W) may be needed between W and C terminals.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTE:** Resistor (1KΩ, ½ W) may be needed between W and C terminals.

Troubleshooting:

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