



# Instruction Sheet

## SR501-EXP Switching Relay

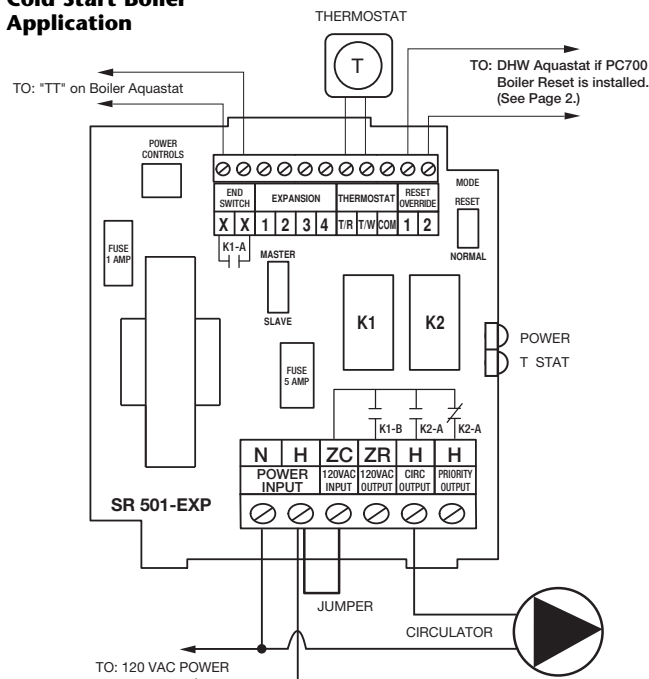
102-204

SUPERSEDES: March 1, 2006

EFFECTIVE: January 1, 2007

Plant ID# 9300-2236

### Cold Start Boiler Application



**Operation:** When the thermostat calls for heat, the appropriate circulator is energized and the isolated end switch (X and X) will start the boiler. Priority Output has power all the time, except when the thermostat is calling.

**Mode Operation:** When the mode 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 through the operation of a plug-in reset control or closure of Priority Input.

**Jumper Placement:** The jumper should be placed between terminals ZC and H. Connect the isolated end switch to the aquastat control on the boiler.

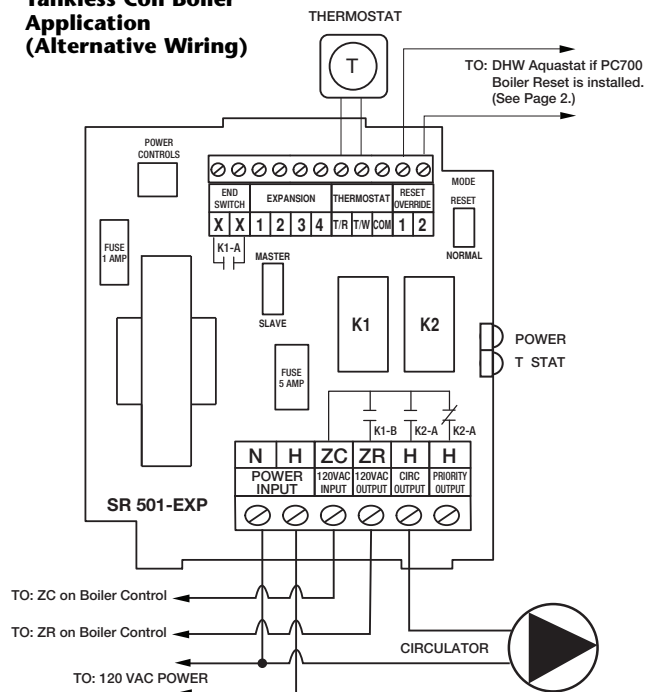
**Power Input:** Connect 120 volt ac power input to terminals N and H. Neutral wire to terminal N. Hot wire to terminal H.

**Expansion Connections:** Set the expansion switch to MASTER on the switching relay that has the designated priority zone or is utilizing the PowerPort options. Set all other daisy chained controls to SLAVE. Connect thermostat wire (18-22 gauge) between terminals 1, 2, 3, 4 on the master control to the corresponding 1, 2, 3, 4 on the SLAVE control(s). Controls may be daisy chained up to 20 zones using any combination of -EXP controls.

**Warning:** When using Alternative Wiring diagram, wiring instructions must be followed so power originates from the boiler aquastat. Failure to follow these wiring instructions may result in a secondary source of power being connected to the boiler that may activate it under certain circumstances, causing injury or death.

<b>Features:</b> External Indicator Lights Ideal for Retrofitting Priority Output Simplified Wiring Add-On Power Controls Sealed Relays Compact Design Fuse Protected 100% Factory Tested Isolated End Switch	Expandable to 20 Zones Contractor Friendly PC Board Layout Universal Thermostat Compatibility UL Approved 24 volt Power Input or Output Terminal Extended 3 Year Warranty Made in the USA
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### Tankless Coil Boiler Application (Alternative Wiring)



**Operation:** When the thermostat calls for heat, the appropriate circulator is energized when the boiler's aquastat is above the set low limit. The ZR (120VAC) output will signal the boiler to start. Priority Output has power all the time, except when the thermostat is calling.

**Mode Operation:** When the mode 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 through the operation of a plug-in reset control or closure of Priority Input.

**Jumper Placement:** REMOVE the jumper between terminals ZC and H. Connect terminal ZC to ZC terminal on the aquastat control. Connect terminal ZR to ZR terminal on the aquastat control. Confirm polarity is consistent between boiler aquastat and switching relay.

**Power Input:** Connect 120 volt ac power input to terminals N and H. Neutral wire to terminal N. Hot wire to terminal H.

**Expansion Connections:** Set the expansion switch to MASTER on the switching relay that has the designated priority zone or is utilizing the PowerPort options. Set all other daisy chained controls to SLAVE. Connect thermostat wire (18-22 gauge) between terminals 1, 2, 3, 4 on the master control to the corresponding 1, 2, 3, 4 on the SLAVE control(s). Controls may be daisy chained up to 20 zones using any combination of -EXP controls.

**External Diagnostics:** Externally visible lights show full functionality of the switching relay. The green light should always be on, indicating that power is connected. When the thermostat calls for heat, both the appropriate circulator and red indicating light are energized.

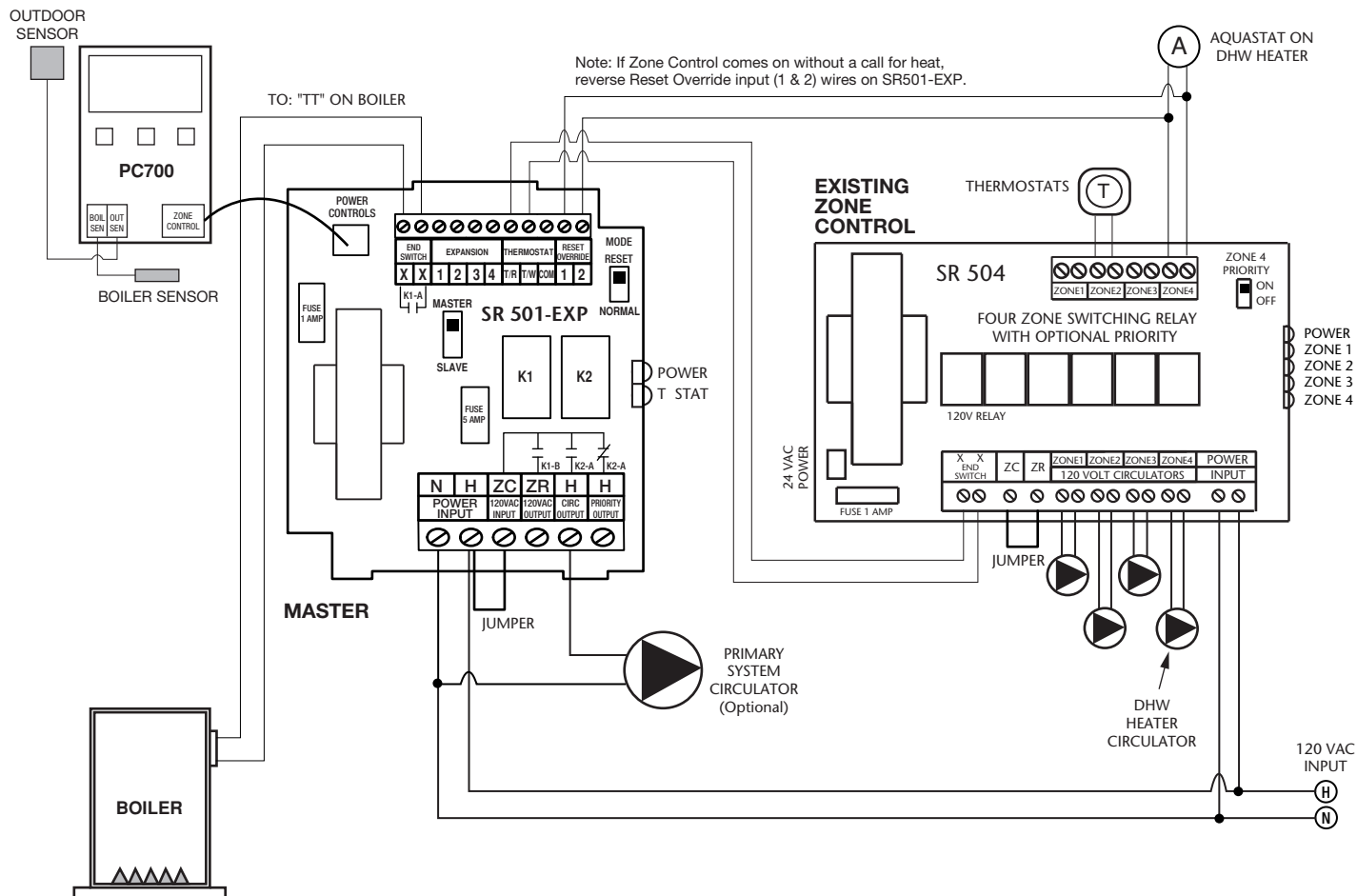
#### Specifications:

PRODUCT NUMBER	NUMBER OF ZONES	POWER CONTROLS	TRANSFORMER VOLTAGE	MAXIMUM COMBINED LOAD	DIMENSIONS OF ENCLOSURE WIDTH	HEIGHT	DEPTH
SR501-EXP	1	1	120 VAC Input	5.0 amps	4 1/4"	5 1/4"	2 3/4"

All Switching Relays are relay type DPDT, have a thermostat current of .18, and have a single phase motor rating per zone of 1/3 hp (5.0A) @ 120 VAC.

**Warning:** Wiring connections must be made in accordance with all applicable electrical codes. Use copper wire only with a minimum temperature rating of 60/75°C. Failure to follow this instruction 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.

## SR501-EXP and PC700 Boiler Reset Control Connected to an Existing Switching Relay



For additional wiring diagrams, see [www.taco-hvac.com](http://www.taco-hvac.com).

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