



# Instruction Sheet

## SR506-EXP Switching Relay

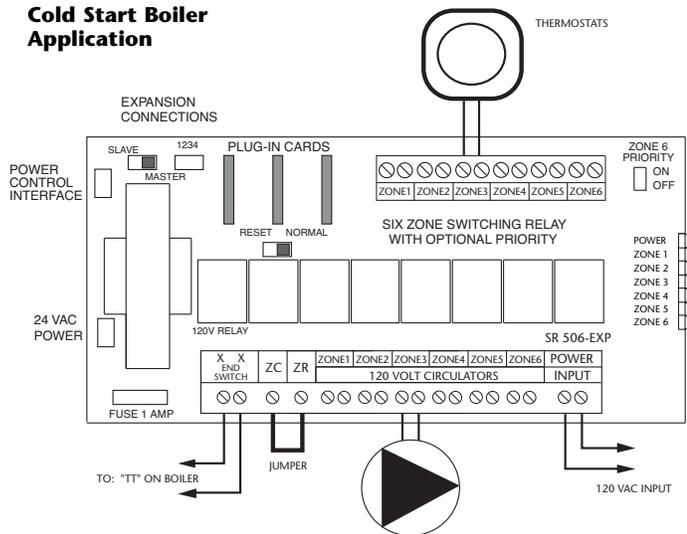
102-088

SUPERSEDES: 102-088 October 15, 2005

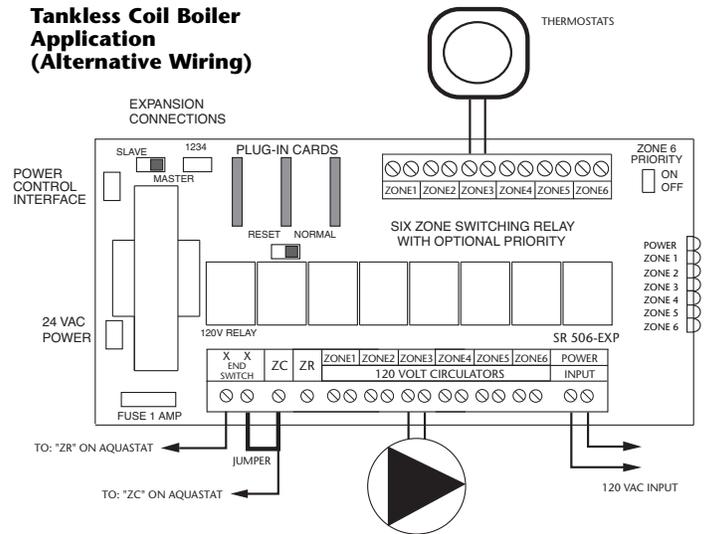
EFFECTIVE: March 1, 2006

Plant ID# 9300-864

### Cold Start Boiler Application



### Tankless Coil Boiler Application (Alternative Wiring)



**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.

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

**Priority Operation:** When zone 6 is switched to the priority setting and is actuated, all other zones will stop operation until zone 6 is satisfied. When zone 6 is not switched to priority, all zones will operate independently.

**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 if priority zone is in operation, or through the operation of a plug-in reset control.

**Jumper Placement:** The jumper should be placed between terminals ZC and ZR. 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.

**Operation:** When any thermostat calls for heat, the boiler and appropriate circulator are energized when the boiler temperature is above the set low limit.

**Priority Operation:** When zone 6 is switched to the priority setting and is actuated, all other zones will stop operation until zone 6 is satisfied. When zone 6 is not switched to priority, all zones will operate independently.

**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 if priority zone is in operation, or through the operation of a plug-in reset control.

**Jumper Placement:** MOVE the jumper between terminals ZC and ZR to end switch X and ZC. Connect terminal ZC to ZC terminal on the aquastat control. Connect the other end switch X 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.

- Features:** External Indicator Lights  
 Plug-In PowerPort Cards  
 Switchable Priority  
 Simplified Wiring  
 Add-On Power Controls  
 Fully Enclosed Snap-Out 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

**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 is energized.

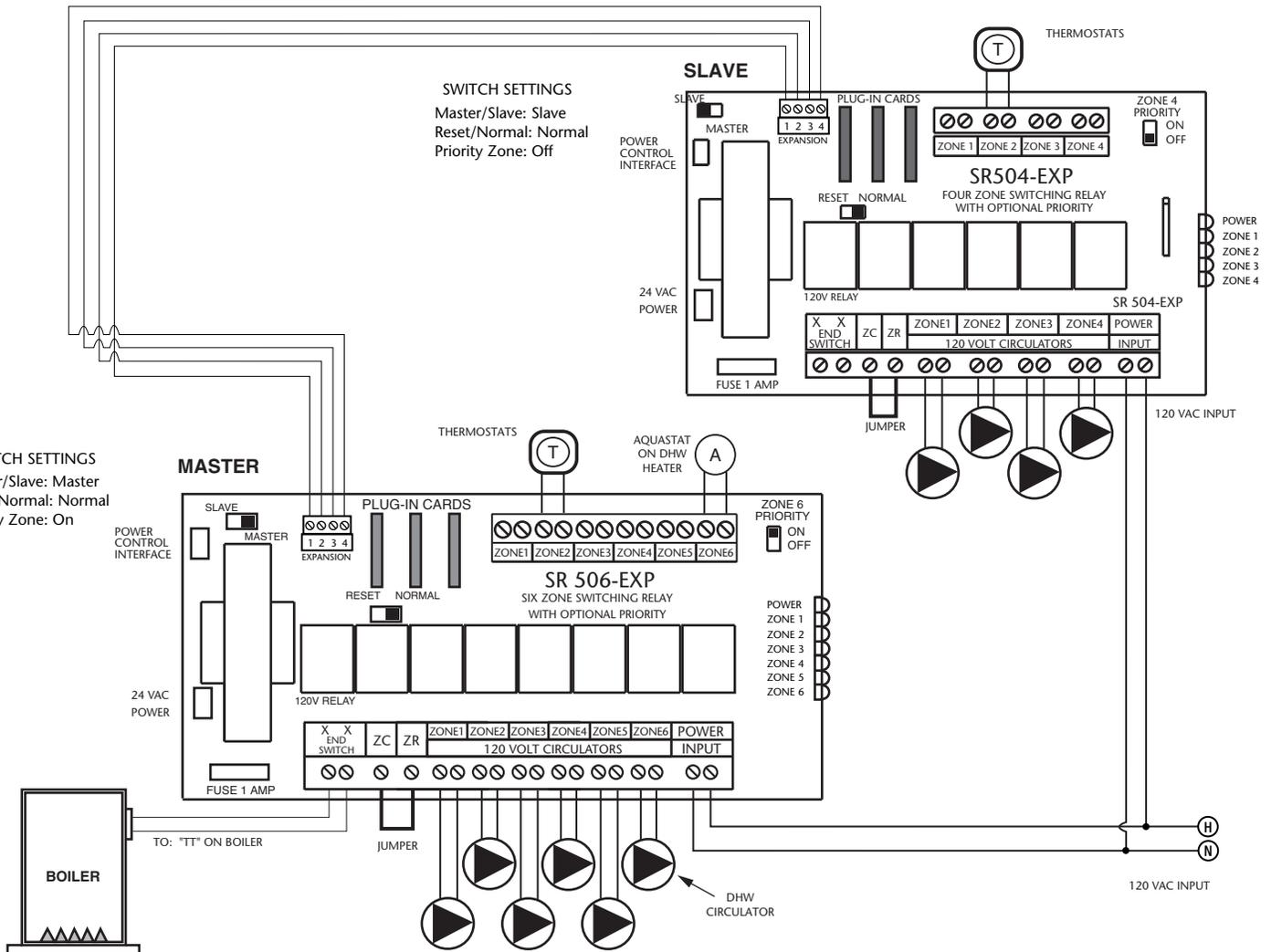
#### Specifications:

PRODUCT NUMBER	NUMBER OF ZONES	POWER PORTS	TRANSFORMER VOLTAGE	MAXIMUM COMBINED LOAD	DIMENSIONS OF ENCLOSURE WIDTH	HEIGHT	DEPTH
SR506-EXP	6 with Priority	3	120 VAC Input	20 amps	11 3/4"	7 1/2"	3"

All Switching Relays are relay type DPST, have a thermostat current of .18, and have a single phase motor rating per zone of 1/3 hp (7.2A) @ 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.

## 2 Expandable Switching Relays Connected Together



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