# TACO ZONE CONTROLS WIRING GUIDE

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching Relays – Single Zone Wiring</td>
<td>2</td>
</tr>
<tr>
<td>Switching Relays – Oil Boiler Wiring Safety Notice</td>
<td>3 - 4</td>
</tr>
<tr>
<td>Switching Relays – <strong>NON</strong> EXP Connected Together with Priority</td>
<td>5 - 11</td>
</tr>
<tr>
<td>Switching Relays – <strong>EXP</strong> Connected Together with Priority</td>
<td>12 - 14</td>
</tr>
<tr>
<td>Switching Relays – Multiple Indirect Hot Water Heaters</td>
<td>15 - 16</td>
</tr>
<tr>
<td>Switching Relays – <strong>EXP</strong> Connected To Reset Controls (PC700, 702 &amp; 705)</td>
<td>17 - 28</td>
</tr>
<tr>
<td>Zone Valve Controls – <strong>NON</strong> EXP Connected Together with Priority</td>
<td>29 - 34</td>
</tr>
<tr>
<td>Zone Valve Controls – <strong>EXP</strong> Connected Together with Priority</td>
<td>35 - 38</td>
</tr>
<tr>
<td>Zone Valve Controls – Connected To Reset Controls (PC700, 702 &amp; 705)</td>
<td>39 - 46</td>
</tr>
<tr>
<td>Hydro Air Fan Controls (HAFC 101 &amp; 201)</td>
<td>47 - 51</td>
</tr>
<tr>
<td>Specialty Thermostat and Zone Valve Wiring</td>
<td>52 - 56</td>
</tr>
<tr>
<td>Radiant Mixing Block</td>
<td>57 - 58</td>
</tr>
<tr>
<td>X-Pump Block</td>
<td>59 - 61</td>
</tr>
<tr>
<td>iSeries Mixing Valves</td>
<td>62 - 63</td>
</tr>
<tr>
<td>Low Water Cutoffs and Electric Water Feeders</td>
<td>64 - 79</td>
</tr>
<tr>
<td>Aquastat Wiring</td>
<td>80 - 86</td>
</tr>
<tr>
<td>Instruction Sheets</td>
<td>87 - 97</td>
</tr>
<tr>
<td>Standard Terms and Definitions</td>
<td>98</td>
</tr>
<tr>
<td>Cross Reference</td>
<td>99 - 100</td>
</tr>
</tbody>
</table>

© Taco Catalog No. 100-9.0

Effective Date: July 1, 2010
Supersedes Date: July 1, 2007
# TACO Zone Control Product Information

## Switching Relays

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR501</td>
<td>1 Zone Switching Relay</td>
</tr>
<tr>
<td>SR501-845RP</td>
<td>1 Zone Switching Relay Replacement PC Board for Honeywell R845, RA89A, RA832 or Comparable Relay</td>
</tr>
<tr>
<td>SR502</td>
<td>2 Zone Switching Relay with Priority</td>
</tr>
<tr>
<td>SR503</td>
<td>3 Zone Switching Relay with Priority</td>
</tr>
<tr>
<td>SR504</td>
<td>4 Zone Switching Relay with Priority</td>
</tr>
<tr>
<td>SR506</td>
<td>6 Zone Switching Relay with Priority</td>
</tr>
</tbody>
</table>

## Switching Relays with PowerPort Options and Expandable to 20 Zones

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR501-EXP</td>
<td>1 Zone Switching Relay</td>
</tr>
<tr>
<td>SR503-EXP</td>
<td>3 Zone Switching Relay with Priority and 3 PowerPorts</td>
</tr>
<tr>
<td>SR504-EXP</td>
<td>4 Zone Switching Relay with Priority and 3 PowerPorts</td>
</tr>
<tr>
<td>SR506-EXP</td>
<td>6 Zone Switching Relay with Priority and 3 PowerPorts</td>
</tr>
</tbody>
</table>

## Zone Valve Controls

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZVC403</td>
<td>3 Zone Valve Control</td>
</tr>
<tr>
<td>ZVC404</td>
<td>4 Zone Valve Control with Priority</td>
</tr>
<tr>
<td>ZVC405</td>
<td>5 Zone Valve Control</td>
</tr>
<tr>
<td>ZVC406</td>
<td>6 Zone Valve Control with Priority</td>
</tr>
</tbody>
</table>

## Zone Valve Controls with PowerPort Options and Expandable to 20 Zones

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZVC404-EXP</td>
<td>4 Zone Valve Control with Priority and 2 PowerPorts</td>
</tr>
<tr>
<td>ZVC406-EXP</td>
<td>6 Zone Valve Control with Priority and 2 PowerPorts</td>
</tr>
</tbody>
</table>

## Plug-In PowerPort Cards (For use with all -EXP controls)

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC600</td>
<td>Post Purge Timer Plug-In Card</td>
</tr>
<tr>
<td>PC605</td>
<td>Priority Protection Plug-In Card</td>
</tr>
<tr>
<td>PC610</td>
<td>Universal Timer/Pump Exercise Plug-In Card</td>
</tr>
</tbody>
</table>

## Add-On Power Controls (For use with all -EXP controls)

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC700</td>
<td>Boiler Reset Control</td>
</tr>
<tr>
<td>PC702</td>
<td>2-Stage Boiler Reset Control</td>
</tr>
<tr>
<td>PC705</td>
<td>Variable Speed Pump Injection Mixing Control</td>
</tr>
</tbody>
</table>

## Fan Controls

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAF100</td>
<td>Hydro Air Fan Control</td>
</tr>
<tr>
<td>HAF200</td>
<td>Hydro Air Fan Control with Optional Time Delays</td>
</tr>
</tbody>
</table>

---

**Do it once.**

**Do it right.**

---

© TACO, Inc.
Note: When using Alternative Wiring diagram, the boiler operating control’s ZC terminal will see the load of the circulator(s).

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.
SAFETY NOTICE

TWO SEPARATE sources of power may be connected to an oil boiler’s aquastat control.

Service Technicians:
Be alert to potential hazard when using any brand or any style switching relay control in conjunction with an oil fired boiler. All power to the boiler may not be routed through the service switch.

Before servicing an oil fired boiler make sure the service switch is turned off. Then confirm that a secondary source of power does not exist to the boiler aquastat control. Failure to check could result in the boiler being activated when a zone calls, resulting in serious injury or death.

How to check for two power sources:
1. Turn off the service switch.
2. Is the switching relay’s power light ON?
   No = no secondary source of power connected to the boiler
   Yes = a secondary source may be connected, see step 3
3. Is the ZR contact of the switching relay connected directly to the ZR contact of the oil boiler’s aquastat control (does not go through the service switch)?
   NO = no secondary source of power connected
   Yes = a secondary source is connected, see step 4
4. Re-wire the system in accordance to the diagram below. Failure to fix the problem could result in the boiler being activated when a zone calls, resulting in serious injury or death.

How to correct the wiring:

NOTE: No tankless coil priority.
NOTE: Tankless coil has priority.

How to correct the wiring:

NOTE: The boiler operating control’s ZC terminal will see the load of the circulator(s).
SR502/503 Switching Relay Controlling Another SR502/503 Switching Relay

MASTER

SR 503

THREE ZONE SWITCHING RELAY WITH OPTIONAL PRIORITY

AQUASTAT ON DHW HEATER

POWER
ZONE 1
ZONE 2
ZONE 3

FUSE 1 AMP

ZONE1 ZONE2 ZONE3

TO: "TT" ON AQUASTAT CONTROL

SLAVE

SR 503

THREE ZONE SWITCHING RELAY WITH OPTIONAL PRIORITY

BOILER

N  P  ZC  H  X1  ZR1

X2

ZONE 2

POWER
ZONE 1
ZONE 3

DHW HEATER CIRCULATOR

120 VOLT CIRCULATORS

PRIORITY ON VIA JUMPER PLACEMENT

120 VAC POWER

PRIORITY OFF VIA JUMPER PLACEMENT

120 VOLT CIRCULATORS

TO: "TT" ON AQUASTAT CONTROL
SR502/503 Switching Relay Controlling Another SR504/506 Switching Relay

Master
- 24 VAC Power
- SR 503
- Three Zone Switching Relay with Optional Priority
- Jumper Placement
- AQUASTAT on DHW Heater
- Priority On via jumper placement

Slave
- 24 VAC Power
- SR 506
- Six Zone Switching Relay with Optional Priority
- T-1 Connection
- 120V Relay
- 120 Volt Circulators
- Priority Off

Connections:
- Power to Zone 1, Zone 2, Zone 3
- Slave Thermostats
- Power to Zone 1, Zone 2, Zone 3
- Boiler to “TT” on Boiler
- 120 VAC Input

Note: Jumper placement for priority control.
Two SR504/506 Switching Relays Connected Together

- 120V Relay
- 120 Volt Circulators
- Power
- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Jumper
- Boiler
- A Aquastat on DHW heater
- 24 VAC Power
- Fuse 1 Amp
- To: "TT" on Boiler
- Output Not Used
- Priority On
- Priority On
- 120 VAC Input
- Power
- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 4 Priority
- Priority
- On
- Off
- Four Zone Switching Relay with Optional Priority
- Zone 4
- Zone 2
- Zone 1
- Zone 3
- Zone 4
- DHW Heater Circulator
- 120V Relay
- Input
- Zone1 Zone2 Zone3 Zone4

Diagram schematic showing connections and components.
Priority Zoning Circulator Controlling SR504/506 Switching Relay

Master

Priority Zoning Circulator

Priority ON

Priority OFF

Slave

SR 506

Six Zone Switching Relay with Optional Priority

T

Thermostats

Power

Zone 1
Zone 2
Zone 3
Zone 4
Zone 5
Zone 6

FUSE 1 AMP

24 VAC Power

To: "TT" on Boiler

Boiler

Aquastat on
DHW Heater

120 VAC Input

Remove Jumper

120 VAC Input

Power

120V Relay

Fuse 1 Amp

120 VAC Input
SR502/503 Switching Relay Controlling 2 SR504/506 Switching Relays

MASTER

SR 503

TWO ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

SR 503

TWO ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

SR 504

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

SR 504

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

AQUASTAT ON
DHW HEATER

24 VAC
POWER

ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP

ZONE 1 ZONE 2 ZONE 3 ZONE 4
120 VOLT CIRCULATORS
ZC   ZR
X    X

END
SWITCH

ZONE1  ZONE2  ZONE3 ZONE4 POWER
INPUT

SR 504

ZONE 2
POWER

ZONE 1
ZONE 3
ZONE 4

H

TO: “TT” ON BOILER

120 VAC INPUT

BOILER
SR501-EXP Switching Relay Controlling a ZVC404/406 Zone Valve Control

### Master
- **AQUASTAT ON DHW HEATER**
- **TO: OPTIONAL ZONE VALVE OR SERIES MIXING VALVE**

### Slave
- **THERMOSTAT**
- **THERMOSTAT**
- **THERMOSTATEXPANSION**
- **JUMPER TO: OPTIONAL ZONE VALVE OR iSeries MIXING VALVE**

### System
- **POWER IN 24 VAC FACTORY INSTALLED TRANSFORMER 120 VAC INPUT**
- **WHITE BLACK**

- **SYSTEM PUMP TURNS ON WHEN ANY ZONE VALVE OPENS.**
- **SYSTEM PUMP TURNS ON WHEN ANY ZONE VALVE OPENS EXCEPT WHEN THE DHW HEATER (SR501-EXP) CALLS.**

### Note
- When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.
2 Expandable Switching Relays Connected Together

**SWITCH SETTINGS**
- Master/Slave: Slave
- Reset/Normal: Normal
- Priority Zone: Off

**SLAVE**
- 120V RELAY
- FUSE 1 AMP
- POWER CONTROL INTERFACE
- 24 VAC POWER

**MASTER**
- 120V RELAY
- FUSE 1 AMP
- POWER CONTROL INTERFACE
- 24 VAC POWER
- TO: "TT" ON BOILER

**SR504-EXP**
- FOUR ZONE SWITCHING RELAY WITH OPTIONAL PRIORITY

**SR506-EXP**
- SIX ZONE SWITCHING RELAY WITH OPTIONAL PRIORITY

**AQUASTAT**
- ON DHW HEATER

**THERMOSTATS**

**BOILER**
- DHW CIRCULATOR
2 Indirect Water Heaters with Priority Connected to Standard Switching Relays

MASTER

SLAVE

SLAVE

24 VAC POWER

120V RELAY

120 VOLT CIRCULATORS

JUMPER

ZONE 1
ZONE 2
ZONE 3
ZONE 4

FUSE 1 AMP

ZONE NOT USED

TO: "TT" ON BOILER

AQUASTATS ON DHW HEATERS

PRIORITY OFF

POWER ZONE 1
ZONE 2

PRIORITY ON

TO: "TT" ON BOILER

120 VOLT CIRCULATORS

JUMPER

ZONE 1
ZONE 2
ZONE 3
ZONE 4

TO: "TT" ON BOILER

120 VAC INPUT
2 Indirect Water Heaters with Priority Connected to EXP Switching Relays

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Normal
Priority Zone: On

DHW CIRCULATORS
AQUASTATS ON
DHW HEATERS
MASTER SLAVE
ZONE NOT USED

120 VOLT CIRCULATORS
CHAPTER 10

SR 502
TWO ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

POWER ZONE 1
ZONE 2

SWITCH SETTINGS
Master/Slave: Slave
Reset/Normal: Normal
Priority Zone: Off

SR 504-EXP
FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

POWER ZONE 1
ZONE 2
ZONE 3
ZONE 4
PC700 Boiler Reset Control Connected to SR501-EXP Switching Relay

- **OUTDOOR SENSOR**
- **PC700**
- **BOILER SENSOR**
- **BOILER**
- **ZONE CONTROL**
- **THERMOSTAT**
- **120 VAC INPUT**
- **SYSTEM CIRCULATOR**
- **SWITCH SETTINGS**
  - Master/Slave: Master
  - Reset/Normal: Reset

**Diagram Notes:**
- POWER INPUT
- Fuse 1 AMP
- Normal Master Slave
- Output
- Jumper
- To: OPTIONAL ZONE VALVE OR iSeries MIXING VALVE
- Mode
- Fuse 5 AMP
- SR 501-EXP
- T
- To: "TT" ON BOILER

**System Connections:**
- Boiler Sensor
- Zone Control
- Boiler Sensor
- Outdoor Sensor
- PC700
- Switch Settings
  - Master/Slave: Master
  - Reset/Normal: Reset
- 120 VAC Input
- System Circulator
- Thermostat
- Expansion X Jumper to Optional Zone Valve or iSeries Mixing Valve
SR501-EXP and PC700 Boiler Reset Control Connected to an Existing Switching Relay

Connecting a DHW Heater to an Existing Heating Only Switching Relay Using an SR501-EXP and PC700 Boiler Reset Control
Connecting a DHW Heater to an Existing Heating Only Zone Valve Control
Using an SR501-EXP and PC700 Boiler Reset Control

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.
SR501-EXP and PC700 Boiler Reset Control Connected to an Existing Tankless Coil Boiler – Zoning with Circulators

Boiler and Zone Control(s) need to be on same power supply (same circuit breaker).

SR501-EXP and PC700 Boiler Reset Control Connected to an Existing Tankless Coil Boiler – Zoning with Zone Valves

Boiler and Zone Control(s) need to be on same power supply (same circuit breaker).
PC700 Boiler Reset Control Connected to EXP Switching Relay

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
1234
PLUG-IN CARDS
RESET
NORMAL
SLAVE
POWER
CONTROL INTERFACE
THERMOSTATS

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VAC INPUT TO: "TT" ON BOILER
120 VOLT CIRCULATORS
ZC  ZR
X  X
END
SWITCH
JUMPER

TO: "TT" ON BOILER

PC700

BOILER

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off
SR 504-EXP
T

PC700 Boiler Reset Control Connected to EXP Switching Relay

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
1234
PLUG-IN CARDS
RESET
NORMAL
SLAVE
POWER
CONTROL INTERFACE
THERMOSTATS

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VAC INPUT TO: "TT" ON BOILER
120 VOLT CIRCULATORS
ZC  ZR
X  X
END
SWITCH
JUMPER

TO: "TT" ON BOILER

PC700

BOILER

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off
SR 504-EXP
T

PC700 Boiler Reset Control Connected to EXP Switching Relay

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
1234
PLUG-IN CARDS
RESET
NORMAL
SLAVE
POWER
CONTROL INTERFACE
THERMOSTATS

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VAC INPUT TO: "TT" ON BOILER
120 VOLT CIRCULATORS
ZC  ZR
X  X
END
SWITCH
JUMPER

TO: "TT" ON BOILER

PC700

BOILER

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off
SR 504-EXP
T

PC700 Boiler Reset Control Connected to EXP Switching Relay

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
1234
PLUG-IN CARDS
RESET
NORMAL
SLAVE
POWER
CONTROL INTERFACE
THERMOSTATS

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VAC INPUT TO: "TT" ON BOILER
120 VOLT CIRCULATORS
ZC  ZR
X  X
END
SWITCH
JUMPER

TO: "TT" ON BOILER

PC700

BOILER

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off
SR 504-EXP
T

PC700 Boiler Reset Control Connected to EXP Switching Relay

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
1234
PLUG-IN CARDS
RESET
NORMAL
SLAVE
POWER
CONTROL INTERFACE
THERMOSTATS

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VAC INPUT TO: "TT" ON BOILER
120 VOLT CIRCULATORS
ZC  ZR
X  X
END
SWITCH
JUMPER

TO: "TT" ON BOILER

PC700

BOILER

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off
SR 504-EXP
T

PC700 Boiler Reset Control Connected to EXP Switching Relay

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
1234
PLUG-IN CARDS
RESET
NORMAL
SLAVE
POWER
CONTROL INTERFACE
THERMOSTATS

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VAC INPUT TO: "TT" ON BOILER
120 VOLT CIRCULATORS
ZC  ZR
X  X
END
SWITCH
JUMPER

TO: "TT" ON BOILER

PC700

BOILER

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off
SR 504-EXP
T

PC700 Boiler Reset Control Connected to EXP Switching Relay

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
1234
PLUG-IN CARDS
RESET
NORMAL
SLAVE
POWER
CONTROL INTERFACE
THERMOSTATS

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VAC INPUT TO: "TT" ON BOILER
120 VOLT CIRCULATORS
ZC  ZR
X  X
END
SWITCH
JUMPER

TO: "TT" ON BOILER

PC700

BOILER

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off
SR 504-EXP
T

PC700 Boiler Reset Control Connected to EXP Switching Relay

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
1234
PLUG-IN CARDS
RESET
NORMAL
SLAVE
POWER
CONTROL INTERFACE
THERMOSTATS

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VAC INPUT TO: "TT" ON BOILER
120 VOLT CIRCULATORS
ZC  ZR
X  X
END
SWITCH
JUMPER

TO: "TT" ON BOILER

PC700

BOILER

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off
SR 504-EXP
T

PC700 Boiler Reset Control Connected to EXP Switching Relay

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
1234
PLUG-IN CARDS
RESET
NORMAL
SLAVE
POWER
CONTROL INTERFACE
THERMOSTATS

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VAC INPUT TO: "TT" ON BOILER
120 VOLT CIRCULATORS
ZC  ZR
X  X
END
SWITCH
JUMPER

TO: "TT" ON BOILER

PC700

BOILER

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off
SR 504-EXP
T

PC700 Boiler Reset Control Connected to EXP Switching Relay

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
1234
PLUG-IN CARDS
RESET
NORMAL
SLAVE
POWER
CONTROL INTERFACE
THERMOSTATS

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VAC INPUT TO: "TT" ON BOILER
120 VOLT CIRCULATORS
ZC  ZR
X  X
END
SWITCH
JUMPER

TO: "TT" ON BOILER

PC700

BOILER

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off
SR 504-EXP
T

PC700 Boiler Reset Control Connected to EXP Switching Relay

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
ZONE 4
ON
OFF
PRIORITY
120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
1234
PLUG-IN CARDS
RESET
NORMAL
SLAVE
POWER
CONTROL INTERFACE
THERMOSTATS

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VAC INPUT TO: "TT" ON BOILER
120 VOLT CIRCULATORS
ZC  ZR
X  X
END
SWITCH
JUMPER

TO: "TT" ON BOILER

PC700

BOILER

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off
SR 504-EXP
T
PC702 2–Stage Boiler Reset Control Connected to EXP Switching Relay

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Normal
Priority Zone: On or Off

SR 504-EXP
WIRING NEEDED ONLY IF
PRIORITY ZONE IS DHW
SYSTEM
CIRCULATOR
(OPTIONAL)
PC705 Variable Speed Pump Injection Control Connected to EXP Switching Relay

NOTE A: WHEN SYSTEM CIRCULATOR IS CONNECTED TO ZR TERMINAL ON SWITCHING RELAY, THE MODE SWITCH MUST BE SET TO NORMAL. THE PC705-2 WILL NOT RESET THE BOILER WHEN IN THE NORMAL MODE.

NOTE B: WHEN SYSTEM CIRCULATOR IS CONNECTED TO RED WIRE ON PC705-2, THE CIRCULATOR WILL OPERATE ONLY WHEN THERMOSTAT CALLS FOR HEAT AND THE OUTDOOR TEMPERATURE IS BELOW THE WARM WEATHER SHUT DOWN (WWSD) TEMPERATURE. THE WWSD CAN BE ADJUSTED OR TURNED OFF SO THAT THE CIRCULATOR IS NOT AFFECTED BY OUTDOOR TEMPERATURE.
PC700 Boiler Reset Control Connected to 2 EXP Switching Relays

**Switch Settings**
- Master/Slave: Master
- Reset/Normal: Reset
- Priority Zone: On or Off

**Master**
- Master/Slave: Master
- Reset/Normal: Normal
- Priority Zone: No Priority

**Slave**
- Master/Slave: Slave
- Reset/Normal: Normal
- Priority Zone: No Priority

**Relays**
- 24 VAC Power
- 120V Relay
- FUSE 1 AMP
- 120 VOLT CIRCULATORS
- ZONE 1, ZONE 2, ZONE 3, ZONE 4

**Thermostats**
- ZONE 1, ZONE 2, ZONE 3, ZONE 4

**System Circulator (Optional)**
- 120 VAC Input

**Diagram**
- PC700 Boiler
- Boiler Sensor
- Outdoor Sensor
- EXPANSION 1234
- MASTER SLAVE SYSTEM CIRCULATOR (OPTIONAL)

---

**Switch Settings**
- Master/Slave: Slave
- Reset/Normal: Normal
- Priority Zone: No Priority

---

24
PC705 Variable Speed Pump Injection Control Connected to 2 EXP Switching Relays

**SWITCH SETTINGS**
- **Master/Slave:**
  - Master
  - Slave
- **Reset/Normal:**
  - Reset
  - Normal
- **Priority Zone:**
  - On or Off
  - No Priority

**Diagram**
- **Master**
  - Four Zone Switching Relay
  - 24 VAC Power
  - 120V Relay
  - Fuse 1 AMP
  - 24 Volt Circulators
  - Power
  - Control Interface
  - Thermostats
  - Zone 4 Priority: On or Off

- **Slave**
  - Four Zone Switching Relay
  - 24 VAC Power
  - 120V Relay
  - Fuse 1 AMP
  - 24 Volt Circulators
  - Power
  - Control Interface
  - Thermostats
  - Zone 4 Priority: On or Off

**Connections**
- **BOILER**
  - 120 VAC Input
  - 120 Volt Circulators
  - Zone 1, Zone 2, Zone 3, Zone 4
  - Jumper
  - SR 504-EXP Master/Slave System Circulator (Optional)
  - See Note A on Page 23

- **PC705-2**
  - Supply Sensor
  - Outdoor Sensor
  - Red
  - Blue
  - Black
  - Green/Ground

**Notes**
- See Note B on Page 23
- See Note C on Page 23
PC702 and PC705 Controls Connected to 2 EXP Switching Relays

**SWITCH SETTINGS**
- Master/Slave: Master
- Reset/Normal: Normal
- Priority Zone: On or Off

**THERMOSTATS**
- ZONE 1
- ZONE 2
- ZONE 3
- ZONE 4

**MASTER**
- POWER
  - ZONE 1
  - ZONE 2
  - ZONE 3
  - ZONE 4

**SLAVE**
- POWER
  - ZONE 1
  - ZONE 2
  - ZONE 3
  - ZONE 4

**PC702 and PC705 Controls**
- BOILER 
  - #1
  - #2

**BOILER CONTROL INTERFACE**
- 120V RELAY
- FUSE 1 AMP
- 24 VAC POWER

**PLUG-IN CARDS**
- EXPANSION
- ZONE 1
- ZONE 2
- ZONE 3
- ZONE 4

**JUMPER**
- SWITCH SETTINGS
  - Master/Slave: Slave
  - Reset/Normal: Normal
  - Priority Zone: No Priority

**WIRING**
- 120 VAC INPUT
- 120 VAC OUTPUT
- GREEN/GROUND
- BLACK
- RED
- BLUE

** NOTE:**
- SR 504-EXP Wiring needed only if Priority Zone is DHW
- SEE NOTE A ON PAGE 23
- SEE NOTE B ON PAGE 23
ZVC403/405 with System Pump

System Pump and boiler turn on when any zone valve opens.
ZVC404/406 with System Pump

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.
ZVC404/406 with Domestic Hot Water (DHW) Pump

ZVC 406
SIX ZONE ZONE VALVE CONTROL
WITH OPTIONAL PRIORITY

THERMOSTAT
THERMOSTAT
THERMOSTAT

AQUASTAT ON
DHW HEATER

ZONE 1
ZONE 2
ZONE 3
ZONE 4
ZONE 5
ZONE 6

MODE
NORMAL
RESET

FUSE (7 AMP MAX)

ZONE 6 PRIORITY
OFF
ON

TO BOILER AQUASTAT RELAY

DHW PUMP

BOILER TURNS ON WHEN ANY ZONE VALVE OPENS.
DHW PUMP TURNS ON ONLY WHEN PRIORITY ZONE CALLS.

SEE NOTE

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.
ZVC404/406 with System and DHW Pumps

System pump and boiler turn on when any zone valve opens. DHW pump turns on only when priority zone calls.

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.
ZVC404/406 with System, DHW and Secondary Pumps

System Pump and Boiler turn on when any Zone Valve opens.
DHW Pump turns on ONLY when Priority Zone calls.
Secondary Pump comes on when any Zone calls EXCEPT Priority Zone.

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.
Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.
2 EXP Zone Valve Controls Connected Together with System Pump

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Normal
Priority Zone: On

SWITCH SETTINGS
Master/Slave: Slave
Reset/Normal: Normal
Priority Zone: Off

SYSTEM PUMP AND BOILER TURN ON WHEN ANY ZONE VALVE OPENS.
2 EXP Zone Valve Controls Connected Together with DHW Pump

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Normal
Priority Zone: On

SWITCH SETTINGS
Master/Slave: Slave
Reset/Normal: Normal
Priority Zone: Off

Master

Slave

ZVC 406-EXP
SIX ZONE ZONE VALVE CONTROL
WITH OPTIONAL PRIORITY

To Boiler
AQUASTAT Relay

DHW PUMP

BOILER TURNS ON WHEN ANY ZONE VALVE OPENS.
DHW PUMP TURNS ON ONLY WHEN PRIORITY ZONE CALLS.

SEE NOTE

AQUASTAT ON DHW HEATER

T STAT 1
VALVE 1
T STAT 2
VALVE 2
T STAT 3
VALVE 3
T STAT 4
VALVE 4
T STAT 5
VALVE 5
T STAT 6
VALVE 6
POWER ON

ZONE 1
ZONE 2
ZONE 3
ZONE 4
ZONE 5
ZONE 6

FUSE 7 AMP MAX
TT TT TT TT TT TT
ZONE 6
OFF
ON
1234
ZONE 1
1234
ZONE 2
1234
ZONE 3
1234
ZONE 4
1234
ZONE 5
1234

MODE
NORMAL
RESET

TACO
3 WIRE ZONE VALVE
1
2
3
JUMPER
3 & 4
MOTOR END SWITCH

4 WIRE ZONE VALVE
(Power Open, Self Closing)

MASTER

SLAVE

PLUG-IN CARDS

CONTACTS

SEE NOTE

T STAT 1
VALVE 1
T STAT 2
VALVE 2
T STAT 3
VALVE 3
T STAT 4
VALVE 4
T STAT 5
VALVE 5
T STAT 6
VALVE 6
POWER ON

ZONE 4
PRIORITY
ZONE

SEE NOTE

AQUASTAT ON DHW HEATER

T STAT 1
VALVE 1
T STAT 2
VALVE 2
T STAT 3
VALVE 3
T STAT 4
VALVE 4
T STAT 5
VALVE 5
T STAT 6
VALVE 6
POWER ON

ZONE 4
PRIORITY
ZONE

SEE NOTE

AQUASTAT ON DHW HEATER

T STAT 1
VALVE 1
T STAT 2
VALVE 2
T STAT 3
VALVE 3
T STAT 4
VALVE 4
T STAT 5
VALVE 5
T STAT 6
VALVE 6
POWER ON

ZONE 4
PRIORITY
ZONE

SEE NOTE

AQUASTAT ON DHW HEATER

T STAT 1
VALVE 1
T STAT 2
VALVE 2
T STAT 3
VALVE 3
T STAT 4
VALVE 4
T STAT 5
VALVE 5
T STAT 6
VALVE 6
POWER ON

ZONE 4
PRIORITY
ZONE

SEE NOTE

AQUASTAT ON DHW HEATER
Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

System pump and boiler turn on when any zone valve opens. DHW pump turns on only when priority zone calls.
2 EXP Zone Valve Controls Connected Together with System, DHW and Secondary Pumps

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Normal
Priority Zone: On

Master

Slave

TACO, INC  ZVC406-EXP

T STAT 1
T STAT 2
T STAT 3
T STAT 4
T STAT 5
T STAT 6

POWER ON

DHW HEATER

SYSTEM PUMP AND BOILER TURN ON WHEN ANY ZONE VALVE OPENS.
DHW PUMP TURNS ON ONLY WHEN PRIORITY ZONE CALLS.
SECONDARY PUMP TURNS ON WHEN ANY ZONE CALLS, EXCEPT PRIORITY ZONE.

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.
PC700 Boiler Reset Control Connected To EXP Zone Valve Control

Switch Settings
- Master/Slave: Master
- Reset/Normal: Reset
- Priority Zone: On or Off

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

System circulator and boiler turn on when any zone valve opens.
PC705 Variable Speed Pump Injection Control Connected To EXP Zone Valve Control

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

SYSTEM CIRCULATOR AND BOILER TURN ON WHEN ANY ZONE VALVE OPENS.
PC700 Boiler Reset Control Connected To 2 EXP Zone Valve Controls

---

**SWITCH SETTINGS**

- Master/Slave: Master
- Reset/Normal: Reset
- Priority Zone: On or Off

---

**Master**

- 24 VAC Input
- 120 VAC Input
- Switch Settings:
  - Master/Slave: Master
  - Reset/Normal: Reset
  - Priority Zone: On or Off

---

**Slave**

- 24 VAC Input
- 120 VAC Input
- Switch Settings:
  - Master/Slave: Slave
  - Reset/Normal: Normal
  - Priority Zone: Off

---

**Indirect Water Heater Aquastat or Thermostat**

---

**Notes:**
- When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.
- System Circulator and Boiler turn on when any zone valve opens.
- DHW Circulator turns on only when priority zone calls.

---

**Diagram Overview:**

- PC700 System Circulator
- Boiler AQUASTAT RELAY
- TACO, INC ZVC406-EXP
- 24 VAC Factory Installed Transformer
- 120 VAC Input
- White, Black, Dry Contacts
- Zone 6 Relay
- N/C End Switch
- Pump End Switch
- Boiler Zone Control
- Boiler Sensor
- Outdoor Sensor

---

**Technical Details:**

- PC700 System Circulator
- Boiler AQUASTAT RELAY
- TACO, INC ZVC406-EXP
- 24 VAC Factory Installed Transformer
- 120 VAC Input
- White, Black, Dry Contacts
- Zone 6 Relay
- N/C End Switch
- Pump End Switch
- Boiler Zone Control
- Boiler Sensor
- Outdoor Sensor

---

**Diagram:**

- System Circulator and Boiler turn on when any zone valve opens.
- DHW Circulator turns on only when priority zone calls.

---

**Instruction:**

- System Circulator and Boiler turn on when any zone valve opens.
- DHW Circulator turns on only when priority zone calls.
PC702 2-Stage Boiler Reset Control Connected To 2 EXP Zone Valve Controls

SWITCH SETTINGS
Master/Slave: Master
Reset/Normal: Normal
Priority Zone: On or Off

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

WIRING NEEDED ONLY IF PRIORITY ZONE IS DHW

SYSTEM CIRCULATOR AND BOILER TURN ON WHEN ANY ZONE VALVE OPENS. DHW CIRCULATOR TURNS ON ONLY WHEN PRIORITY ZONE CALLS.

SWITCH SETTINGS
Master/Slave: Slave
Reset/Normal: Normal
Priority Zone: Off

SEE NOTE

INDIRECT WATER HEATER
AQUASTAT OR THERMOSTAT

POWER IN
24 VAC FACTORY INSTALLED TRANSFORMER 120 VAC INPUT WHITE BLACK
DRY CONTACTS N/O COM ZONE 6 RELAY N/C END SWITCH A PUMP END SWITCH B BOILER SYSTEM CIRCULATOR

24 VAC FACTORY INSTALLED TRANSFORMER 120 VAC INPUT WHITE BLACK BOILER #2 ZONE CONTROL BOIL SEN OUT SEN BOILER SENSOR OUTDOOR SENSOR PC702 STAGE 1 STAGE 2 BOILER #1 DHW DEMAND 24 VAC
PC705 Variable Speed Pump Injection Control Connected To 2 EXP Zone Valve Controls

**SWITCH SETTINGS**
- **Master/Slave:** Master
- **Reset/Normal:** Reset
- **Priority Zone:** On or Off

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

**SYSTEM CIRCULATOR (OPTIONAL LOCATION)**
- **Master/Slave:** Slave
- **Reset/Normal:** Normal
- **Priority Zone:** Off

**INDIRECT WATER HEATER**
- **AQUASTAT OR THERMOSTAT**
- **24 VAC**

(SEE NOTE B ON PAGE 23)
PC700 and PC705 Connected To 2 EXP Zone Valve Controls

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

Switch Settings
Master/Slave: Master
Reset/Normal: Reset
Priority Zone: On or Off

Switch Settings
Master/Slave: Slave
Reset/Normal: Normal
Priority Zone: Off

System circulator and boiler turn on when any zone valve opens. DHW circulator turns on only when priority zone calls.
PC702 and PC705 Connected To 2 EXP Zone Valve Controls

Switch Settings
- Master/Slave: Master
- Reset/Normal: Normal
- Priority Zone: On or Off

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

System Circulator and Boiler turn on when any zone valve opens. DHW Circulator turns on only when priority zone calls.

Indirect Water Heater AQUASTAT or THERMOSTAT
HAFC 101 WITH 1 SPEED AIR HANDLER
(Both HFC 101 and HAFC 201 are capable of 1 and 2 speed applications.)
HAFC 101 WITH 2 SPEED AIR HANDLER

(Both HFC 101 and HAFC 201 are capable of 1 and 2 speed applications.)
HAFC 201 WITH 1 SPEED AIR HANDLER

(Both HFC 101 and HAFC 201 are capable of 1 and 2 speed applications.)
NOTE: For 4 minute on delay of Heating Fan, switch 1 and 3 MIN ON DELAY to ON position.

HAFC 201 WITH 2 SPEED AIR HANDLER
(Both HFC 101 and HAFC 201 are capable of 1 and 2 speed applications.)
White-Rogers 1361 Hydronic Zone Valve with TACO Zone Valve Control

NOTE: WHEN USING ZVC 404 OR ZVC 406, CONNECT WIRE #2 OF ZONE VALVE TO PRIORITY ZONE RIGHT TT SCREW

<table>
<thead>
<tr>
<th>TERMINAL ASSIGNMENT</th>
<th>ZONE VALVE</th>
<th>CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TT (Rt)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

WHITE-ROGERS 1361 HYDRONIC ZONE VALVE

THERMOSTAT

THERMOSTAT

THERMOSTAT

ZVC 405

FIVE ZONE ZONE VALVE CONTROL

ZONE 1

ZONE 2

ZONE 3

ZONE 4

ZONE 5

WHITE-ROGERS 1361 HYDRONIC ZONE VALVE

3 WIRE ZONE VALVE (TACO TYPE)

4 WIRE ZONE VALVE (HONEYWELL TYPE)

T STAT 1

VALVE 1

T STAT 2

VALVE 2

T STAT 3

VALVE 3

T STAT 4

VALVE 4

T STAT 5

VALVE 5

POWER

24 VAC

FACTORY INSTALLED TRANSFORMER

120 VAC INPUT

WHITE-120 VAC INPUT BLACK

BLACK-RED BLACK-RED

RIGHT TT SCREW (SEE NOTE)

TO T&T ON BOILER OR PUMP RELAY

POWER IN

24 VAC

FACTORY INSTALLED TRANSFORMER
Honeywell VC 40 & 80 (spdt) Hydronic Zone Valve with TACO Zone Valve Control

NOTE: WHEN USING ZVC 404 OR ZVC 406, CONNECT WIRE #3 OF ZONE VALVE TO PRIORITY ZONE RIGHT TT SCREW

TERMINAL ASSIGNMENT

<table>
<thead>
<tr>
<th>ZONE VALVE</th>
<th>CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORANGE</td>
<td>1</td>
</tr>
<tr>
<td>BLUE</td>
<td>2</td>
</tr>
<tr>
<td>BROWN</td>
<td>3</td>
</tr>
<tr>
<td>GRAY</td>
<td>4</td>
</tr>
<tr>
<td>BLACK</td>
<td>6</td>
</tr>
</tbody>
</table>

ZVC 405
FIVE ZONE ZONE VALVE CONTROL

NOTE:
CONNECT WIRE #3 OF ZONE VALVE TO PRIORITY ZONE RIGHT TT SCREW

TERMINAL ASSIGNMENT

<table>
<thead>
<tr>
<th>ZONE VALVE</th>
<th>CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORANGE</td>
<td>1</td>
</tr>
<tr>
<td>BLUE</td>
<td>2</td>
</tr>
<tr>
<td>BROWN</td>
<td>3</td>
</tr>
<tr>
<td>GRAY</td>
<td>4</td>
</tr>
<tr>
<td>BLACK</td>
<td>6</td>
</tr>
</tbody>
</table>
570 Zone Valve to Switching Relay

- **SR 503**
  - THREE ZONE SWITCHING RELAY WITH OPTIONAL PRIORIT
  - POWER ZONE 1 ZONE 2 ZONE 3
  - TO: 120 VAC POWER (NEUTRAL)
  - TO: 120 VAC POWER (HOT)
  - TO: "TT" ON AQUASTAT CONTROL
  - TO: "TT" ON AQUASTAT CONTROL

- **24 VAC TRANSFORMER**
  - 24 VAC POWER
  - FUSE 1 AMP

- **THERMOSTAT**

- **JUMPERS**
  - N   P   ZC   H   X   ZR1   X2

- **120 VOLT CIRCULATORS**
Zone Valve Control with 1 Low Temperature Zone Using Priority Zoning Circulator

ZVC 406
SIX ZONE ZONE VALVE CONTROL
WITH OPTIONAL PRIORITY

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

SYSTEM PUMP AND BOILER TURN ON WHEN ANY ZONE VALVE OPENS.

POWER IN
120 VAC INPUT

TO BOILER AQUASTAT RELAY

SYSTEM PUMP

THERMOSTAT

THERMOSTAT

THERMOSTAT

AQUASTAT ON
DHW HEATER

ZONE 6 PRIORITY

END SWITCH

EXTRA

END SWITCH

MAIN

TO BOILER AQUASTAT RELAY

SYSTEM PUMP

4 WIRE ZONE VALVE (POWER OPEN, SELF CLOSING)

TACO 3 WIRE ZONE VALVE

PRIORITY ZONING CIRCULATOR

PRIORITY ON

BOILER

SYSTEM PUMP

120 VAC INPUT

WHITE
120 VAC INPUT
BLACK

24 VAC

WHITE
120 VAC INPUT
BLACK

24 VAC

MODE
NORMAL RESET
FUSE (7 AMP MAX)

ZONE 6 PRIORITY

ZONE 1 ZONE 2 ZONE 3 ZONE 4 ZONE 5 ZONE 6

T STAT 1
VALVE 1
T STAT 2
VALVE 2
T STAT 3
VALVE 3
T STAT 4
VALVE 4
T STAT 5
VALVE 5
T STAT 6
VALVE 6
POWER

LIVE NEUT

1 2 3 4

PR-IN PR-OUT

SEE NOTE
Radiant Mixing Block Connected to Zone Valve Control with System Pump Wired off the RMB

Radiant Mixing Block Connected to 2 EXP Switching Relays with DHW Pump
X - Pump Block (XPB)

Front of Control

Back of Control

X - Pump Block, Single Zone

FOR ADDITIONAL WIRING DIAGRAMS, PLEASE SEE www.taco-hvac.com/wiringwizard
X - Pump Block Connected to Zone Valve Control

X - Pump Block Connected to 2 SR502/503 Switching Relays

FOR ADDITIONAL WIRING DIAGRAMS, PLEASE SEE www.taco-hvac.com/wiringwizard
**Typical Radiant Floor to Water Heater Installation**

![Diagram of a radiant floor heating system](image)

**WARNING:** A pressure relief valve and expansion tank must be installed on the secondary side in addition to any pressure relief valve and expansion tank which is installed on primary side of system. Use dedicated supply and return piping to the X-Pump Block from the water heater so as not to add heated water into the house’s cold water piping.

**Typical Snow Melt Installation**

![Diagram of a snow melt system](image)

**Note 1:** There must be no more than 4 pipe diameters between the tees in the boiler and system loops in order to prevent ghost flow when the variable speed injection pump is off and either the boiler pump or system pump is on.

**Note 2:** There must be at least 6 pipe diameters of straight pipe on either side of the tees in order to prevent the momentum of water in the boiler and system loops from pushing flow through the injection loop.

**Note 3:** There should be a minimum 1 foot drop to create a thermal trap in order to prevent convective heat transfer through the injection loop.

- **Tb** = Boiler Supply Temperature
- **Ts** = System Supply Temperature
- **ΔTs** = System Temperature Drop (typically 20°F for convectors and 10°F for radiant floor heating)
iSeries Mixing Valve

iValve-S

iValve-R

iValve, 2-Way Injection, Single Zone

FOR ADDITIONAL WIRING DIAGRAMS, PLEASE SEE www.taco-hvac.com/wiringwizard
iValve, 3-Way Mixing Working with SR502/503 Switching Relay with DHW Priority

FOR ADDITIONAL WIRING DIAGRAMS, PLEASE SEE www.taco-hvac.com/wiringwizard
Wiring for Boilers with Honeywell Control Center Model R8285 or Equivalent

Alternate Wiring

TACO LTR0243T-1
WH RED YEL GRN YEL

GAS VALVE
120 VAC
TACO LTR0243T-1
YELREDWH YEL GRN

LIMIT CONTROLS
24 VAC
CLASS 2
TRANSFORMER
24 VAC
HOT
COMMON

GROUND CONNECTION
FEMALE CONNECTOR
FACTORY WIRING
MALE CONNECTOR
Wiring Boilers with a United Technologies Ucontrol or other Integrated Control Modules which accept a 4-pin harness and a Taco LTR0243L-1

Wiring Instructions
1. Plug the 4-pin connector on the wiring harness (#1 as shown) into the integrated control module.
2. Plug the 4-pin connector on the wiring harness (#2 as shown) into the LTR.
Wiring Taco LN and LTA-2 Series Low Water Cutoffs
Using Burner Circuit Power Source

NOTE: For 24 VAC models, LNA024xx and LTA0243S-2, 24 VAC to be supplied by an EXTERNAL Class 2 power source to terminals H and N. For 120 VAC models, LNA120xx and LTA1203S-2, 120 VAC is supplied by an external circuit to terminals H and N.

Wiring Taco LN and LTA-2 Series Low Water Cutoffs
Using Power Source Other Than Burner Circuit

NOTE: For 24 VAC models, LNA024xx and LTA0243S-2, 24 VAC to be supplied by an EXTERNAL Class 2 power source to terminals H and N. For 120 VAC models, LNA120xx and LTA1203S-2, 120 VAC is supplied by an external circuit to terminals H and N.
Wiring Taco LT Series (1st generation, -1) Low Water Cutoffs
Using Burner Circuit Power Source

NOTE: For 24 VAC models, LTx024xx-1, 24 VAC to be supplied by an EXTERNAL Class 2 power source to terminals H and N. For 120 VAC models, LTx120xx-1, 120 VAC is supplied by an external circuit to terminals H and N.

Wiring Taco LT Series (1st generation, -1) Low Water Cutoffs
Using Power Source Other Than Burner Circuit

NOTE: For 24 VAC models, LTx024xx-1, 24 VAC to be supplied by an EXTERNAL Class 2 power source to terminals H and N. For 120 VAC models, LTx120xx-1, 120 VAC is supplied by an external circuit to terminals H and N.
Wiring Taco LF Series Low Water Cutoffs Using Burner Circuit Power Source

NOTE: Remote probe available on remote probe models only.

NOTE: For 24 VAC models, LFx024xx, 24 VAC to be supplied by an EXTERNAL Class 2 power source to terminals H and N. For 120 VAC models, LFx120xx, 120 VAC is supplied by an external circuit to terminals H and N.

Wiring Taco LF Series Low Water Cutoffs Using Power Source Other Than Burner Circuit

NOTE: For 24 VAC models, LFx024xx, 24 VAC to be supplied by an EXTERNAL Class 2 power source to terminals H and N. For 120 VAC models, LFx120xx, 120 VAC is supplied by an external circuit to terminals H and N.
## Taco Low Water Cutoff Replacement Guide

<table>
<thead>
<tr>
<th>Taco</th>
<th>McDonnell &amp; Miller</th>
<th>Hydrolevel</th>
<th>Honeywell</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFA1203S-1</td>
<td>PS-801-120</td>
<td>450</td>
<td>RW700A1031</td>
</tr>
<tr>
<td>LTA1203N-1</td>
<td>PS-800-120</td>
<td>CG450</td>
<td>RW700A1056</td>
</tr>
<tr>
<td>LTA1203S-1</td>
<td>PS-850-120</td>
<td>CGT450</td>
<td>RW700A1080</td>
</tr>
<tr>
<td>LFA0243S-1</td>
<td>PS-800-24</td>
<td>400</td>
<td>RW700A1098</td>
</tr>
<tr>
<td>LTM0243S-1</td>
<td>PS-802-M-24</td>
<td>500</td>
<td>RW700B1054</td>
</tr>
<tr>
<td>LTM0243N-1</td>
<td>PS-852-M-24</td>
<td>500</td>
<td>RW700B1039</td>
</tr>
<tr>
<td>LTM0243S-1</td>
<td>PS-850-M-24</td>
<td>700</td>
<td>RW700B1021</td>
</tr>
<tr>
<td>LFA1203R-1</td>
<td>750-T-120</td>
<td>650R</td>
<td></td>
</tr>
<tr>
<td>LTA1203R-1</td>
<td>750-120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LFA1202R-1</td>
<td>PS-851-RX2-120</td>
<td>650R</td>
<td></td>
</tr>
<tr>
<td>LFA0242R-1</td>
<td>PS-802-RX2-24</td>
<td>400R</td>
<td></td>
</tr>
<tr>
<td>LTA0243S-2</td>
<td>PS-850-24</td>
<td>24</td>
<td>RW700A1007</td>
</tr>
<tr>
<td>LNA1203S-1</td>
<td>PS-852-SP-24</td>
<td>24SV</td>
<td>RW700A1006</td>
</tr>
<tr>
<td>LTA1203S-2</td>
<td>PS-851-120</td>
<td>170</td>
<td></td>
</tr>
<tr>
<td>LNA1203S-1</td>
<td>PS-851-SP-120</td>
<td>170SV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>750P-MT-120</td>
<td>1150</td>
<td></td>
</tr>
<tr>
<td></td>
<td>750P-MT-SP-120</td>
<td>650</td>
<td></td>
</tr>
<tr>
<td></td>
<td>901</td>
<td>650</td>
<td>OEM170C</td>
</tr>
<tr>
<td></td>
<td>RB-120II</td>
<td></td>
<td>OEM170</td>
</tr>
<tr>
<td></td>
<td>RB-122</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTR0243T-1</td>
<td>RB-24E</td>
<td>1100</td>
<td></td>
</tr>
<tr>
<td>P3R-1</td>
<td>RS-1-BR-1</td>
<td>EL1214-R</td>
<td></td>
</tr>
<tr>
<td>EWF120</td>
<td>WFE-120</td>
<td>VRTX-120</td>
<td>VW400A1004</td>
</tr>
<tr>
<td>EWF024</td>
<td>WFE2-U-120V</td>
<td>VRTX-24</td>
<td>VW800A1004</td>
</tr>
</tbody>
</table>

**Bold / Italics Indicates Discontinued Part Number**
Taco LF Series 120 Volt LWCO Competitive Wiring Cross Reference

120 VAC Models with 120 VAC Burner Circuits

TACO LFx120x

<table>
<thead>
<tr>
<th>NC</th>
<th>NO</th>
<th>COM</th>
<th>H</th>
<th>N</th>
<th>GND</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>BURNER CIRCUIT</td>
<td>FACTORY INSTALLED JUMPER</td>
<td>120 VAC CIRCUIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

McDONNELL & MILLER PS-801/851-120 w/Red & Amber LEDs Series 750

1 2 3 4 5

HOT

120 VAC CIRCUIT

NEUTRAL

HYDROLEVEL 450, 550, 650 & 750

<table>
<thead>
<tr>
<th>2</th>
<th>1</th>
<th>P1</th>
<th>P2</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOT</td>
<td>120 VAC CIRCUIT</td>
<td>BURNER CIRCUIT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NEUTRAL

120 VAC Models with 24 VAC Burner Circuits

TACO LFx120x

<table>
<thead>
<tr>
<th>NC</th>
<th>NO</th>
<th>COM</th>
<th>H</th>
<th>N</th>
<th>GND</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>BURNER CIRCUIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

24 VAC TRANSFORMER

| HOT | 120 VAC CIRCUIT |

NEUTRAL

HYDROLEVEL 450, 550, 650 & 750

<table>
<thead>
<tr>
<th>2</th>
<th>1</th>
<th>P1</th>
<th>P2</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOT</td>
<td>120 VAC CIRCUIT</td>
<td>BURNER CIRCUIT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NEUTRAL

McDONNELL & MILLER PS-801/851-120 w/Red & Green LEDs Series 750

1 2 3 4 5

HOT

120 VAC CIRCUIT

NEUTRAL

24 VAC TRANSFORMER

NEUTRAL

BURNER CIRCUIT

24 VAC TRANSFORMER

NEUTRAL

BURNER CIRCUIT
24 VAC Models with 24 VAC Burner Circuits

24 VAC Models with 120 VAC Burner Circuits
### 120 VAC Models with 120 VAC Burner Circuits

**TACO LTA1203S-2**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**McDONNELL & MILLER RB-120**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**McDONNELL & MILLER RB-122E**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**HYDROLEVEL 1150**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**HYDROLEVEL 1150**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

### 120 VAC Models with 24 VAC Burner Circuits

**TACO LTA1203S-2**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**McDONNELL & MILLER RB-120**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**McDONNELL & MILLER RB-122E**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**HYDROLEVEL 1150**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**HYDROLEVEL 1150**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**HYDROLEVEL 170**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**HYDROLEVEL 170**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**HYDROLEVEL 170**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT

**HYDROLEVEL 170**

- **HOT**: 120 VAC CIRCUIT
- **NEUTRAL**: 120 VAC CIRCUIT
24 VAC Models with 24 VAC Burner Circuits

- TACO LTA0243S-2
  - N
  - H
  - COM
  - NC
  - NO
  - 24 VAC CIRCUIT
  - HOT
  - NEUTRAL

- McDonnell & Miller RB-24E
  - Red Wire
  - White Wire
  - Yellow Wire
  - Yellow Wire
  - 24 VAC CIRCUIT
  - HOT
  - NEUTRAL

- HYDROLEVEL 1100
  - Red Wire
  - White Wire
  - Yellow Wire
  - Yellow Wire
  - 24 VAC CIRCUIT
  - HOT
  - NEUTRAL

- HYDROLEVEL 24
  - 2
  - 1
  - P1
  - P2
  - A
  - 24 VAC CIRCUIT
  - HOT
  - NEUTRAL

24 VAC Models with 120 VAC Burner Circuits

- TACO LTR0243T-1
  - Red Wire
  - White Wire
  - Yellow Wire
  - 24 VAC CIRCUIT
  - HOT
  - NEUTRAL

- HYDROLEVEL 24
  - 2
  - 1
  - P1
  - P2
  - A
  - 24 VAC CIRCUIT
  - HOT
  - JUMPER
  - NEUTRAL

- 24 VAC Transformer
  - 120 VAC CIRCUIT
  - HOT
  - NEUTRAL
  - 24 VAC CIRCUIT
Wiring Taco LF Series Low Water Cutoffs to Taco Electric Water Feeder with the Same Voltages

EWF Standard Wiring

Wiring Taco LF Series Low Water Cutoffs to Taco Electric Water Feeder with Different Burner Voltages

EWF Alternate Wiring

* NOTE: Remove factory installed jumper between H and COM terminals
Wiring Taco 24VAC Electric Water Feeder to Taco LF Series 24VAC Low Water Cutoff
or 24VAC McDonnell & Miller or Hydrolevel Low Water Cutoffs

** May be factory installed on some LWCOs

NOTE: Wiring shown only for control and burner circuits of the same voltage. Some terminal designations are not in their actual order on the LWCOs.

Wiring Taco 120VAC Electric Water Feeder to Taco LF Series 120VAC Low Water Cutoff
or 120VAC McDonnell & Miller or Hydrolevel Low Water Cutoffs

** May be factory installed on some LWCOs

NOTE: Wiring shown only for control and burner circuits of the same voltage. Some terminal designations are not in their actual order on the LWCOs.
Wiring TACO LTA-2 or LF Series 24VAC Low Water Cutoff to McDonnell & Miller Series WF2 Uni-Match Electric Water Feeder

UNI-MATCH WATER FEEDER
MODEL WF2-U-24

SWITCH POSITION #2

M&M
2
3

24 VAC LWCO Using Burner Circuit Power Source

Remove jumper between H and COM if using power source other than burner circuit or when using mixed voltages.
Do not connect feeder to a manual reset LWCO.

Wiring TACO LTA-2 or LF Series 120VAC Low Water Cutoff to McDonnell & Miller Series WF2 Uni-Match Electric Water Feeder

UNI-MATCH WATER FEEDER
MODEL WF2-U-120

SWITCH POSITION #2

M&M
2
3

120 VAC LWCO Using Burner Circuit Power Source

Remove jumper between H and COM if using power source other than burner circuit or when using mixed voltages.
Do not connect feeder to a manual reset LWCO.

Note on switch position:

Switch setting 1 (M&M), the feed cycle repeats indefinitely. Position 2 and 3 gives one feed cycle.

If using the LTA-2 series, choose whichever position best matches the application:

WF-2 switch to position 1
- 60 sec. delay, 90 sec. feed, repeats
WF-2 switch to position 2
- 90 sec. delay, 90 sec. feed
WF-2 switch to position 3
- 100 sec. delay, 90 sec. feed
Wiring TACO LF Series 24VAC Low Water Cutoff to Hydrolevel VXT-24 Water Feeder (Non-Display Model)

Set Safgard as desired.

Remove jumper between H and COM if using power source other than burner circuit or when using mixed voltages.
Do not connect feeder to a manual reset LWCO.

24 VAC LWCO Using Burner Circuit Power Source

Wiring TACO LF Series 120VAC Low Water Cutoff to Hydrolevel VXT-120 Water Feeder (Non-Display Model)

Set Safgard as desired.

Remove jumper between H and COM if using power source other than burner circuit or when using mixed voltages.
Do not connect feeder to a manual reset LWCO.

120 VAC LWCO Using Burner Circuit Power Source
Wiring TACO LTA-2 or LF Series 24VAC Low Water Cutoff to Hydrolevel VXT-24 Programmable Water Feeder (Model with Display)

Set Safgard as desired.

Remove jumper between H and COM if using power source other than burner circuit or when using mixed voltages.
Do not connect feeder to a manual reset LWCO.

24 VAC LWCO Using Burner Circuit Power Source

Wiring TACO LTA-2 or LF Series 120VAC Low Water Cutoff to Hydrolevel VXT-120 Programmable Water Feeder (Model with Display)

Set Safgard as desired.

Remove jumper between H and COM if using power source other than burner circuit or when using mixed voltages.
Do not connect feeder to a manual reset LWCO.

120 VAC LWCO Using Burner Circuit Power Source
<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Device or Series</th>
<th>Power Connections</th>
<th>Output Contacts</th>
<th>Remote Probes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Hot</td>
<td>Neutral</td>
<td>Common</td>
</tr>
<tr>
<td>Taco</td>
<td>LT-1 Series</td>
<td>H</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>LTA-2 &amp; LN Series</td>
<td>H</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>PS-801/851 (Older Models w/Red &amp; Amber LEDs)</td>
<td>H</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>PS-802/852 (Older Models w/Red &amp; Green LEDs)</td>
<td>H</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>PS-802/852 (New Models w/Red &amp; Green LEDs)</td>
<td>H</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>PS-801/851 (New Models w/Red &amp; Amber LEDs)</td>
<td>H</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Series 750</td>
<td>H</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>RB-122</td>
<td>H</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>RB-120</td>
<td>H</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>RB-24</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Hydrolevel</td>
<td>170</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1150</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1100</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1150</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>400, 500, 600, 700, 450, 550, 650, 750 (Except RW700A1098)</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel (Except RW700A1098)</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Hydrolevel</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
Aquastat Wiring

HONEYWELL L8124G & L OR EQUAL

HONEYWELL L8124M OR EQUAL

HONEYWELL L8148A OR EQUAL
Aquastat Wiring

HONEYWELL L8148E OR EQUAL

HONEYWELL L8148J OR EQUAL

HONEYWELL L8182D OR EQUAL
Aquastat Wiring

L1 (HOT) 120 VAC INPUT L2 (NEUTRAL)

T

THERMOSTAT (IF INDEPENDENT ZONE)

TACO SWITCHING RELAY

END SWITCH X X ZC ZR N H

HONEYWELL L8124A & C OR EQUAL

CIRCULATOR ON BOILER (IF ATTACHED)

LINE VOLTAGE OIL BURNER RELAY OR GAS VALVE

L1 L2 T T

L1
(HOT)

L2
(NEUTRAL)

LINE VOLTAGE

OIL BURNER RELAY

OR GAS VALVE

CIRCULATOR

ON BOILER

(IF ATTACHED)

THERMOSTAT

(IF INDEPENDENT ZONE)

TACO SWITCHING RELAY

END SWITCH X X ZC ZR N H

HONEYWELL L8124M OR EQUAL

L1 L2 T T

L1
(HOT)

L2
(NEUTRAL)

LINE VOLTAGE OIL BURNER RELAY OR GAS VALVE

HONEYWELL L8124G & L OR EQUAL

83
Aquastat Wiring

HONEYWELL L8148A OR EQUAL

HONEYWELL L8182D OR EQUAL
NOTE: The green wire must be connected to a ground source electrically common to the boiler ground.
Features:
External Indicator Lights
Universal Replaceability
Snap-in PC Board
Simplified Wiring
Fully Enclosed Snap-Out Relays
100% Factory Tested
Contractor Friendly PC Board Layout
Universal Thermostat Compatibility
UL Approved
Extended 3 Year Warranty
Made in the USA

Operation:
Connect a thermostat to the “T T” terminals on the switching relay. When the thermostat calls for heat, the relay is energized and power is given to the circulator.

Power Input:
Connect 120 volt ac power to terminals N and H.

Jumper Placement:
The jumper is factory installed between terminals H and 3 to switch power on terminals 4 n/o and 4 n/c.

External Diagnostics:
The External 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.

The Taco Connection:
Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the “00” family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

Specifications:
<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NUMBER OF ZONES</th>
<th>VOLTAGE</th>
<th>MAXIMUM COMBINED LOAD</th>
<th>Dimensions of Enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR501</td>
<td>1</td>
<td>120 VAC Input</td>
<td>7.2 amps</td>
<td>Width: 4 1/4&quot; Height: 5 1/4&quot; Depth: 2 3/4&quot;</td>
</tr>
</tbody>
</table>

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 (7.2A) @ 120 VAC.

Warning: Wiring connections must be made in accordance with all applicable electrical codes and these instructions. Use copper wire only. Failure to follow these instructions can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

Note: When using Alternative Wiring diagram, the boiler operating control’s ZC terminal will see the load of the circulator(s).

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.

Terminal Description:
T & T Thermostat Connection
COM Common side of transformer, to power some setback thermostats
N Neutral wire of power input
H Hot wire of power input
3 Common terminal for 4 n/o and 4 n/c
4 n/o Normally open terminal
4 n/c Normally closed terminal
6 n/o Normally open terminal
5 Common terminal for 6 n/o and 6 n/c

TACO SR501 REPLACEMENT CROSS-REFERENCE

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>MODEL</th>
<th>CONNECTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taco</td>
<td>SR501</td>
<td>H N 3 4 NO 4 NC S 6 NO 6 NC R/T W/T C</td>
</tr>
<tr>
<td>Argo</td>
<td>AR821</td>
<td>1 2 3 4 5 6 T</td>
</tr>
<tr>
<td>Argo</td>
<td>AR822</td>
<td>L1 L2 3 4 NO 4 NC S 6 NO 6 NC R/T G/T C</td>
</tr>
<tr>
<td>Colombus</td>
<td>MR10</td>
<td>L1 L2 3 4 NO 4 NC S 6 NO 6 NC R/T G/T C</td>
</tr>
<tr>
<td>Erie</td>
<td>SR100</td>
<td>L1 L2 3 4 NO 4 NC S 6 NO 6 NC R/T G/T C</td>
</tr>
<tr>
<td>Honeywell</td>
<td>RA89A</td>
<td>1 2 3 4 T T</td>
</tr>
<tr>
<td>Honeywell</td>
<td>RA832A</td>
<td>1 2 3 4 X X T T</td>
</tr>
<tr>
<td>Honeywell</td>
<td>RB845A</td>
<td>1 2 3 4 5 6 T T</td>
</tr>
<tr>
<td>White-Rogers</td>
<td>889-189</td>
<td>1 2 3 4 T T</td>
</tr>
<tr>
<td>White-Rogers</td>
<td>829-845</td>
<td>1 2 3 4 5 6 T T</td>
</tr>
</tbody>
</table>

Do it Once. Do it Right.
Features:
Universal Replaceability
Indicator Lights
Snap-in PC Board to Existing Enclosure
Simplified Wiring
Fully Enclosed Snap-Out Relay
100% Factory Tested
Universal Thermostat Compatibility
UL Approved
Extended 3 Year Warranty
Made in the USA

Operation:
Connect a thermostat to the “T T” terminals on the switching relay. When the thermostat calls for heat, the relay is energized and power is given to the circulator.

Power Input:
Connect 120 volt ac power to terminals L1 and L2.

Jumper Placement:
The jumper is factory installed between terminals L1 and 3 to switch power on terminal 4.

Diagnostics:
The Indicator 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.

The Taco Connection:
Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the “00” family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

Terminal Description:
T & T Thermostat Connection
L2 Neutral wire of power input
L1 Hot wire of power input
3 Common terminal for 4
4 Normally open terminal
5 Normally open terminal

Note: When using Alternative Wiring diagram, the boiler operating control’s ZC terminal will see the load of the circulator(s).

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.

Specifications:

<table>
<thead>
<tr>
<th>MANUFACTURER MODEL CONNECTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TACO SR501-845RP REPLACEMENT CROSS-REFERENCE</td>
</tr>
<tr>
<td>TACO SR501-845RP 1 Zone 120 VAC Input 7.2 amps 4 1/4&quot; 5 1/4&quot; 2 3/4&quot;</td>
</tr>
<tr>
<td>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 (7.2A) @ 120 VAC.</td>
</tr>
</tbody>
</table>

Warning: Wiring connections must be made in accordance with all applicable electrical codes and these instructions. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.
**Note:** When using Alternative Wiring diagram, the boiler operating control’s ZC terminal will see the load of the circulator(s).

**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 boiler and appropriate circulator are energized when the boiler temperature is above the set low limit.

**Jumper Placement:** A jumper should be placed between terminals ZC and X3. Connect terminal ZC to ZC terminal on the aquastat control. Connect terminal X3 to X1 terminal on the aquastat control. Confirm polarity is consistent between boiler aquastat and switching relay. For zone 1 priority, remove jumper between terminals P and ZC.

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

**The Taco Connection:**
Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the “00” family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

**External Diagnostics:**
Exteriorly 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:**

<table>
<thead>
<tr>
<th>PRODUCT NUMBER</th>
<th>NUMBER OF ZONES</th>
<th>TRANSFORMER VOLTAGE</th>
<th>MAXIMUM COMBINED LOAD</th>
<th>DIMENSIONS OF ENCLOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR502</td>
<td>2 with Priority</td>
<td>120 VAC Input</td>
<td>15 amps</td>
<td>10 1/4&quot; x 6 3/4&quot; x 2 3/4&quot;</td>
</tr>
<tr>
<td>SR503</td>
<td>3 with Priority</td>
<td>120 VAC Input</td>
<td>15 amps</td>
<td>10 1/4&quot; x 6 3/4&quot; x 2 3/4&quot;</td>
</tr>
</tbody>
</table>

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.

**Features:**
External Indicator Lights
Priority
Simplified Wiring
Fully Enclosed Snap-Out Relays
Compact Design
Fuse Protected
100% Factory Tested
Isolated End Switch
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

**Warning:** Wiring connections must be made in accordance with all applicable electrical codes and these instructions. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in. max torque. 12-22 gauge wire for thermostat connections with 9 in. max. torque, and 12-22 gauge wire for 24 VAC source with 5 in. max. torque.
Cold Start Boiler Application

Tankless Coil Boiler Application

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. 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.

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.

The Taco Connection:
Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the “00” family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

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:

<table>
<thead>
<tr>
<th>PRODUCT NUMBER</th>
<th>NUMBER OF ZONES</th>
<th>TRANSFORMER VOLTAGE</th>
<th>MAXIMUM COMBINED LOAD</th>
<th>DIMENSIONS OF ENCLOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR504</td>
<td>4 with Priority</td>
<td>120 VAC Input 20 amps</td>
<td>10 1/4&quot; 6 3/4&quot; 2 3/4&quot;</td>
<td>10 1/4&quot; 6 3/4&quot; 2 3/4&quot;</td>
</tr>
<tr>
<td>SR506</td>
<td>6 with Priority</td>
<td>120 VAC Input 20 amps</td>
<td>11 3/4&quot; 7 1/2&quot; 3&quot;</td>
<td>11 3/4&quot; 7 1/2&quot; 3&quot;</td>
</tr>
</tbody>
</table>

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.

Features:
External Indicator Lights
Switchable Priority
Simplified Wiring
Fully Enclosed Snap-Out Relays
Compact Design
Fuse Protected
100% Factory Tested
Isolated End Switch
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

Warning: Wiring connections must be made in accordance with all applicable electrical codes and these instructions. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in lbs. max torque.
**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 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.

**Features:**
- 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

**Specifications:**
- 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 are energized.

**Do it Once. Do it Right.**

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.

TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3 Telephone: 905/564-9422 FAX: 905/564-9436.

Visit our website at: http://www.taco-hvac.com
**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 Y) 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 terminals 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

**Specifications:**
- **SR503-EXP:** 3 with Priority 3 120 VAC Input 20 amps 10 1/4" 6 3/4" 2 3/4"
- **SR504-EXP:** 4 with Priority 3 120 VAC Input 20 amps 10 1/4" 6 3/4" 2 3/4"
- **SR506-EXP:** 6 with Priority 3 120 VAC Input 20 amps 11 3/4" 7 1/2" 3"

**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.

**Warning:** Wiring connections must be made in accordance with all applicable electrical codes and these instructions. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

---

**Do it Once. Do it Right.**

**TACO, INC.,** 1160 Cranston Street, Cranston, RI 02920  Telephone: (401) 942-8000  FAX: (401) 942-2360.

**TACO (Canada), Ltd.,** 6180 Ordan Drive, Mississauga, Ontario L5T 2B3  Telephone: 905/564-9422  FAX: 905/564-9436.

Visit our web site at: http://www.taco-hvac.com
Operation/External Diagnostics: When any thermostat calls for heat, the appropriate zone valve is energized and the yellow light goes on. When the zone valve is fully open, the red light goes on and energizes the end switch relay. The green light should always be on, indicating that power is connected.

The Taco Connection: Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the “00” family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

Warning: Wiring connections must be made in accordance with all applicable electrical codes. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

Specifications:

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Number of Zones</th>
<th>Transformer Max Output</th>
<th>Dimensions of Enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZVC403</td>
<td>3 Zone</td>
<td>120 VAC Input</td>
<td>40 VA</td>
</tr>
<tr>
<td>ZVC405</td>
<td>5 Zone</td>
<td>120 VAC Input</td>
<td>80 VA</td>
</tr>
</tbody>
</table>

Specifications include: Transformer Max Output, Dimensions of Enclosure: Width 10 ½" Height 6 ½", Depth 2 ½".

All Zone Valve Controls are relay type DPDT and have a single phase motor rating per zone of ½ hp (5A) @ 120 VAC.

Features:
- External Indicator Lights
- Simplified Wiring
- Works with 2, 3, or 4-Wire Zone Valves
- Compact Design
- Fuse Protected
- 100% Factory Tested
- Isolated End Switch
- Extra Set of Dry Contacts
- Contractor Friendly PC Board Layout
- Universal Thermostat Compatibility
- UL Approved
- Sturdy Screw Connections
- Extended 3 Year Warranty
- Made in the USA

Do it Once. Do it Right.
Wiring Diagram

Diagram

Operation/External Diagnostics: When any thermostat calls for heat, the appropriate zone valve is energized and the yellow light goes on. When the zone valve is fully open, the red light goes on and energizes the end switch relay. The green light should always be on, indicating that power is connected.

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. Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

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.

The Taco Connection: Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the “00” family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

Specifications:

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Number of Zones</th>
<th>Transformer</th>
<th>Max Output at 24 VAC</th>
<th>Dimensions of Enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZVC404</td>
<td>4 with Priority</td>
<td>120 VAC</td>
<td>40 VA</td>
<td>10 1/2&quot; x 6 1/4&quot; x 2 1/2&quot;</td>
</tr>
<tr>
<td>ZVC406</td>
<td>6 with Priority</td>
<td>120 VAC</td>
<td>80 VA</td>
<td>11 1/4&quot; x 7 1/4&quot; x 3&quot;</td>
</tr>
</tbody>
</table>

All Zone Valve Controls are relay type DPDT and have a single phase motor rating per zone of 1/6 hp (5A) @ 120 V AC.

Features:

- External Indicator Lights
- Switchable Priority
- Simplified Wiring
- Works with 2, 3, or 4-Wire Zone Valves
- Compact Design
- Fuse Protected
- 100% Factory Tested
- Isolated End Switch
- Extra Set of Dry Contacts
- Contractor Friendly PC Board Layout
- Universal Thermostat Compatibility
- UL Listed
- Sturdy Screw Connections
- Extended 3 Year Warranty
- Made in the USA

Warning: Wiring connections must be made in accordance with all applicable electrical codes. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in lbs. max torque, 12-22 gauge wire for 24 VAC source with 5 in lbs. max torque.

Do it Once. Do it Right.

TACO, Inc., 1160 Cranston Street, Cranston, RI 02920  Telephone: (413) 942-8000  FAX: (413) 942-2360.
TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3  Telephone: 905/564-9422  FAX: 905/564-9436.

Visit our web site at: http://www.taco-hvac.com
Wiring Diagram

Operation/External Diagnostics: When any thermostat calls for heat, the appropriate zone valve is energized and the yellow light goes on. When the zone valve is fully open, the red light goes on and energizes the end switch relays. The green light should always be on, indicating that power is connected.

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. Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

Mode Operation: When the mode switch is set to NORMAL, both end switch relays will be energized if any zone is in operation. When the mode switch is set to RESET, the end switch relay “A’’ will only be energized when the priority zone is in operation. The end switch relay “B’’ will be energized when any zone is in operation.

Power Input: Connect 120 volt ac power input to leads on transformer. Neutral to white wire. Hot to black wire.

Expansion Connections: Set the expansion switch to MASTER on the zone valve control 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 Switching Relay - EXP or Zone Valve - EXP controls.

Specifications:

<table>
<thead>
<tr>
<th>PRODUCT NUMBER</th>
<th>TRANSFORMER VOLTAGE</th>
<th>MAX OUTPUT AT 24 VAC</th>
<th>DIMENSIONS OF ENCLOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZVC404-EXP 6 with Priority</td>
<td>120 VAC Input 80 VA</td>
<td>1 1/2” x 1 1/2” x 3”</td>
<td></td>
</tr>
</tbody>
</table>

All Zone Valve Controls are relay type DPDT and have a single phase motor rating per zone of 1/8 hp (SA) @ 120 VAC.

Features:

- External Indicator Lights
- Plug-In PowerPort Cards
- Switchable Priority
- Simplified Wiring
- Add-On Power Controls
- Works with 2, 3, or 4-Wire Zone Valves
- UL Approved
- Fuse Protected
- 100% Factory Tested
- Isolated End Switch
- Expandable to 20 Zones
- Extra Set of Dry Contacts
- Contractor Friendly PC Board Layout
- Universal Thermostat Compatibility
- Sturdy Screw Connections
- Extended 3 Year Warranty
- Made in the USA

Do it Once. Do it Right.

TACO, INC., 1160 Cranston Street, Cranston, RI 02920  Telephone: (401) 942-8000  FAX: (401) 942-2360.
TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3  Telephone: 905/564-9422  FAX: 905/564-9436.

Printed in USA
Copyright 2000

Visit our web site at: http://www.taco-hvac.com
Operation HAFC101 and 201:
The Hydro Air Fan Control is an interface between the thermostat and air handler. It also has an isolated end switch to start the boiler and/or pump. When the thermostat calls for heat, the Fan Control energizes the end switch relay and allows the fan to operate at low speed when the water is above the optional aquastat setting. When the thermostat calls for cooling, the Fan Control energizes the condenser and operates on high speed.

Additional HAFC201 Operations:
Selectable one, three or four minute delay on fan operation in heating mode. Selectable pump exercise activates circulator but does not enable boiler contacts. Two minutes every 24 hours minimizes the chance of bacteria build-up in an open loop system. Thirty seconds every two weeks minimizes seasonal start-up problems generally associated with harsh water conditions. Optional aquastat or thermostat can be connected to Freeze Protection TT terminals to reduce the chance of pipes freezing by energizing the pump dry contacts (boiler contacts not activated.)

Switch Settings (HAFC201):
1 1 minute on fan delay, in heating mode
2 3 minute on fan delay, in heating mode
1&2 4 minute on fan delay, in heating mode
3 Pump dry contact activated for 2 minutes every 24 hours (boiler contacts not activated)
4 Pump dry contacts activated for 30 seconds every two weeks (boiler contacts not activated)

External Diagnostics:
The external lights show full functionality of the Hydro Air Fan Control. The green light should always be on, indicating that power is connected. Red lights indicate fan operation for heating and cooling modes.

Warning:
Wiring connections must be made in accordance with all applicable electrical codes. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

Terminal Description:

Thermostat:
C Optional: Common side of transformer to power some styles of thermostats
R Red - Hot side of transformer used to switch all functions

Water Coil Aquastat:
TT Connect to aquastat at air handler to control operation of the fan when in the heating mode. Install a jumper if the aquastat is not used.

Freeze Protection Aquastat:
TT Connect to aquastat or thermostat to sense low ambient temperature. Reduces the chance of pipes freezing by energizing the pump dry contacts.

Pump Dry Contacts:
XX May switch pump directly by bringing in external line voltage or connect to “T T” on a switching relay.

Boiler Dry Contacts:
XX Connect to the boiler or “T T” terminals on a switching relay.

Air Handler:
C Common side of transformer to power the Fan Control
R Red - Hot side of transformer used to switch all functions
Y Yellow - Condenser signal

One Speed Motor:
G
Connect the fan to the relay. Keep the jumper installed between G
and G
.

Two Speed Motor:
G
Remove jumper and connect G
 to the high speed fan relay and connect G
 to the low speed fan relay.

Specifications:

<table>
<thead>
<tr>
<th>PRODUCT NUMBER</th>
<th>NUMBER OF ZONES</th>
<th>POWER INPUT VOLTAGE</th>
<th>MAXIMUM COMBINED LOAD</th>
<th>RELAY TYPE</th>
<th>THERMOSTAT CURRENT</th>
<th>SINGLE PHASE MOTOR RATING (RELAY)</th>
<th>DIMENSIONS OF ENCLOSURE WIDTH</th>
<th>HEIGHT</th>
<th>DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAFC101**</td>
<td>1 Zone</td>
<td>24 VAC Input</td>
<td>5 amps</td>
<td>DPDT</td>
<td>.18</td>
<td>1/6 HP(5A) @120VAC</td>
<td>4 1/4&quot;</td>
<td>5 1/4&quot;</td>
<td>2 3/4&quot;</td>
</tr>
<tr>
<td>HAFC201</td>
<td>2 Zone</td>
<td>24 VAC Input</td>
<td>5 amps</td>
<td>DPDT</td>
<td>.18</td>
<td>1/6 HP(5A) @120VAC</td>
<td>4 1/4&quot;</td>
<td>5 1/4&quot;</td>
<td>2 3/4&quot;</td>
</tr>
</tbody>
</table>

The Hydro Air Fan Controls are relay type DPDT, have a thermostat current of .18 and a single phase motor rating per zone of 1/6 HP (5A) @ 120 VAC.

Do it Once. Do it Right.

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.
TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3 Telephone: 905/564-9422. FAX: 905/564-9436.

Visit our web site at: http://www.taco-hvac.com

Printed in USA
Copyright 1999
TACO, Inc.
Do it Once. Do it Right.
TACO, INC., 1160 Cranston Street, Cranston, RI 02920  Telephone: (401) 942-8000  FAX: (401) 942-2360.
TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3.  Telephone: 905/564-9422.  FAX: 905/564-9436.

Instruction Sheet
PC600 Post Purge Timer Plug-In PowerPort Card

SUPERSEDES: August 1, 1997
EFFECTIVE: May 1, 2000
Plant ID No. 9300-867
Operation:
Once the priority zone is satisfied, the PC600 maintains power to the circulator, but does not fire the boiler. The circulator purges excess heat into the priority zone, minimizing standby loss during warm weather months and optimizing boiler operation when used with a boiler reset control. Power can be maintained to the circulator from a minimum of 10 seconds to a maximum of 420 seconds. The power LED light is energized when the priority zone or the post purge card is in operation.
Installation:
The PC600 can be installed in any one of the PowerPort terminals located on the Taco Expandable (-EXP) Control(s). Remove the shunt/jumper between pins 9 & 10 on the PowerPort terminal before installing the PC600. Align the connector on the base of the post purge card with the PowerPort terminal on the Expandable Control and push until the two mate.
XX Terminals (Optional):
The XX terminals on the post purge card can be wired to TT on the boiler to fire only when the priority zone is calling for heat. If using a boiler with an internal reset control, wire the XX terminals in parallel with the TT connections of the internal reset control.

Do it Once. Do it Right.
TACO, INC., 1160 Cranston Street, Cranston, RI 02920  Telephone: (401) 942-8000  FAX: (401) 942-2360.
TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3.  Telephone: 905/564-9422.  FAX: 905/564-9436.

Instruction Sheet
PC605 Priority Protection Plug-In PowerPort Card

SUPERSEDES: MAY 1, 1998
EFFECTIVE: MAY 1, 2000
PLANT ID NO. 9300-1012
Operation:
The PC605 Priority Protection Plug-In Card is a solid state control that helps prevent freeze-ups in the event of a priority zone failure. If the priority zone calls for heat continuously for more than one hour, power is returned to the space heating (non-priority) zones, allowing all zones to function independently. Once the priority zone is satisfied, the PC605’s auto-reset is activated and the priority zone is again allowed to have priority for up to one hour the next time it calls. The one hour time frame is not adjustable. The red LED light is energized only when the Priority Protection Card is operating in priority override mode.
Installation:
The PC605 can be installed in any unoccupied PowerPort terminal located on the Taco Expandable (-EXP) Control(s). Do not remove the shunt between pins 9 & 10 on the Expandable Control unless a PC600 is also installed. Align the connector on the base of the priority protection card with the PowerPort terminal on the Expandable Control and push until the two mate. The PC605 can be used in conjunction with any other Taco PC style PowerPort Cards or Add-on Controls.

Do it Once. Do it Right.
TACO, INC., 1160 Cranston Street, Cranston, RI 02920  Telephone: (401) 942-8000  FAX: (401) 942-2360.
TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3.  Telephone: 905/564-9422.  FAX: 905/564-9436.

Instruction Sheet
PC610 Pump Exercise and Timer Plug-In PowerPort Card

SUPERSEDES: May 31, 1998
EFFECTIVE: May 1, 2000
Plant ID No. 9300-1025
Operation:
The PC610 Pump Exercise and Timer Plug-In Card is a solid state universal timer designed to cycle all the pumps that are attached to the Expandable Control(s) at selected time intervals. This minimizes seasonal start-up problems generally associated with harsh water conditions. The control can be configured to reduce the chance of freeze-ups by cycling the pumps more often during cold weather months. Bacteria can be minimized in heating systems that utilize domestic hot water heaters as their heat source by systematically circulating the water.
Installation:
The PC610 can be installed in any unoccupied PowerPort terminal located on the Taco Expandable (-EXP) Control(s). Do not remove the shunt between pins 9 & 10 on the Expandable Control unless a PC600 is also installed. Align the connector on the base of the priority protection card with the PowerPort terminal on the Expandable Control and push until the two mate. The PC601 can be used in conjunction with any other Taco PC style PowerPort Cards or Add-on Controls.
Typical Settings:

<table>
<thead>
<tr>
<th>Application</th>
<th>On Time</th>
<th>Off Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Exercise</td>
<td>30 sec.</td>
<td>2 weeks</td>
</tr>
<tr>
<td>Bacteria Minimization</td>
<td>4 min.</td>
<td>12 hours</td>
</tr>
<tr>
<td>Freeze Protection</td>
<td>4 min.</td>
<td>1 hour</td>
</tr>
</tbody>
</table>

Do it Once. Do it Right.
TACO, INC., 1160 Cranston Street, Cranston, RI 02920  Telephone: (401) 942-8000  FAX: (401) 942-2360.
TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3.  Telephone: 905/564-9422.  FAX: 905/564-9436.
**Standard Terms and Definitions**

**Switching Relay:** Transformer and relay in one box, which allows a low voltage thermostat to control a line voltage load (circulator), with an isolated end switch that can energize the boiler.

**Zone Valve Control:** Transformer and relay in one box, which allows a low voltage thermostat to control a low voltage zone valve, with an isolated end switch that can energize the boiler and/or circulators.

**Dry Contacts:** Set of relay contacts that make and break, where no voltage is present. Usually can switch 24 or 120 VAC.

**Isolated End Set Switch:** Set of dry contacts that make when a zone calls for heat. Usually connected to a boiler's aquastat TT.

**Mode Switch:** Switch set to **NORMAL** – When any zone calls for heat, the end switch will make and fire the boiler.

Switch set to **RESET** – When any zone calls for heat, a heat demand signal is given to external add-on reset control and it controls boiler operation. Also when the priority zone calls for heat and is switched to priority, the end switch will override reset control and fire boiler to high limit.

**TT:** Where thermostat or aquastat connects on a heating control.

**XX:** Denotes Isolated End Switch.

**Low Voltage:** 24 VAC for most HVAC systems.

**Line Voltage:** Normally 120 VAC relative to ground.

**H or L1:** Hot side of line voltage.

**N or L2:** Neutral side of line voltage.

**ZR:** 120 VAC (Hot) signal from switching relay to boiler’s operating aquastat to fire the burner to high limit when any zone calls for heat. Also ideal for controlling primary circulator.

**ZC:** 120 VAC (Hot) signal from boiler’s operating aquastat to switching relay allowing circulator(s) to run when aquastat is above the set low limit.

**Cold Start:** A boiler that fires only when there is a call for heat.

**Tankless Coil:** A method of heating domestic water utilizing a heat exchanger inside a boiler. The boiler also maintains heat year round to deliver hot water on demand.

**DHW Heater:** A method of heating domestic water utilizing a heat exchanger and storage tank.

**Transformer:** A component for increasing or reducing AC voltage. Rated in VA (volts x amps).

**OHMS Law:** Example: A 24 volt, 40 VA transformer can produce how much current?

\[
\begin{align*}
I &= \frac{E}{R} \\
R &= \frac{E}{I} \\
E &= I \times R \\
W &= E \times I \\
I &= \frac{W(\text{VA})}{E}
\end{align*}
\]

**RELAY CONTACTS:**

- **N/C:** Normally closed connection of a relay, when not energized.
- **N/O:** Normally open connection of a relay, when not energized.
- **Com:** The common terminal for normally open and normally closed.
- **Pole:** The number of independent circuits of a switch or relay.
- **Throw:** The number of settings which a switch or relay can have.

**DPDT = Double Pole Double Throw**
# TACO Zone Controls Cross-Reference

## Switching Relays

<table>
<thead>
<tr>
<th>TACO</th>
<th>ARGO</th>
<th>ERIE</th>
<th>Honeywell</th>
<th>White-Rogers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Zone Switching Relay (DPDT)</td>
<td>SR501</td>
<td>AR821 (1), AR822</td>
<td>SR100</td>
<td>RA89A (2), RA845A (1), RA832A (1)</td>
</tr>
<tr>
<td>1 Zone Switching Relay Replacement PC Board (DTSP)</td>
<td>SR501-845RP</td>
<td>AR821-842</td>
<td>SR100-845</td>
<td>RA89A-845A</td>
</tr>
<tr>
<td>2 Zone Switching Relay with Priority</td>
<td>SR502</td>
<td>AR-861-2 (3)</td>
<td>SR201</td>
<td>R8888A1007</td>
</tr>
<tr>
<td>3 Zone Switching Relay with Priority</td>
<td>SR503</td>
<td>AR-861-3 (3)</td>
<td>SR301</td>
<td>R8888B1005</td>
</tr>
<tr>
<td>4 Zone Switching Relay with Priority</td>
<td>SR504</td>
<td>AR-842</td>
<td>SR601</td>
<td>R8888B1005</td>
</tr>
<tr>
<td>6 Zone Switching Relay with Priority</td>
<td>SR506</td>
<td>AR-866</td>
<td>SR601 (4)</td>
<td>R8888B1005</td>
</tr>
</tbody>
</table>

## Switching Relays with PowerPort Options

<table>
<thead>
<tr>
<th>TACO</th>
<th>ARGO</th>
<th>ERIE</th>
<th>Honeywell</th>
<th>White-Rogers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Zone Switching Relay with Priority and 3 Power Ports</td>
<td>SR503-EXP</td>
<td>ARM-861-DP (5,6), ARM-3P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Zone Switching Relay with Priority and 3 Power Ports</td>
<td>SR504-EXP</td>
<td>ARM-842-DP (5,6), ARM-4P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Zone Switching Relay with Priority and 3 Power Ports</td>
<td>SR506-EXP</td>
<td>ARM-866-DP (5,6), ARM-6P</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Zone Valve Controls

<table>
<thead>
<tr>
<th>TACO</th>
<th>ARGO</th>
<th>ERIE</th>
<th>Honeywell</th>
<th>White-Rogers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Zone Valve Control</td>
<td>ZVC403 (7)</td>
<td>AZ-3</td>
<td></td>
<td>R8889A1014</td>
</tr>
<tr>
<td>4 Zone Valve Control with Priority</td>
<td>ZVC404 (7)</td>
<td>AZ-4P</td>
<td></td>
<td>R8889B1012</td>
</tr>
<tr>
<td>5 Zone Valve Control</td>
<td>ZVC405 (7)</td>
<td>AZ-5</td>
<td></td>
<td>VL500 (8)</td>
</tr>
<tr>
<td>6 Zone Valve Control with Priority</td>
<td>ZVC406 (7)</td>
<td>AZ-6P</td>
<td></td>
<td>VL500 (8)</td>
</tr>
</tbody>
</table>

## Zone Valve Controls with PowerPort Options

<table>
<thead>
<tr>
<th>TACO</th>
<th>ARGO</th>
<th>ERIE</th>
<th>Honeywell</th>
<th>White-Rogers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Plug In PowerPort Cards

<table>
<thead>
<tr>
<th>TACO</th>
<th>ARGO</th>
<th>ERIE</th>
<th>Honeywell</th>
<th>White-Rogers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Purge Timer Plug-In Card</td>
<td>PC600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Priority Protection Plug-In Card</td>
<td>PC605</td>
<td></td>
<td></td>
<td>DPM-1</td>
</tr>
<tr>
<td>Universal Timer/Pump Exercize Plug-In Card</td>
<td>PC610</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### ADD-ON POWER CONTROLS

<table>
<thead>
<tr>
<th>Control</th>
<th>TACO</th>
<th>ARGO</th>
<th>ERIE</th>
<th>HONEYWELL</th>
<th>WHITE-ROGERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler Reset Control</td>
<td>PC700</td>
<td>DPM-2</td>
<td>BB1200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Stage Boiler Reset Control</td>
<td>PC702</td>
<td></td>
<td>BB1200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable Speed Pump Injection Mixing Control</td>
<td>PC705</td>
<td></td>
<td></td>
<td>BB3000</td>
<td></td>
</tr>
</tbody>
</table>

### FAN CONTROLS

<table>
<thead>
<tr>
<th>Control</th>
<th>TACO</th>
<th>ARGO</th>
<th>ERIE</th>
<th>HONEYWELL</th>
<th>WHITE-ROGERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Zone Hydro Air Fan Control (1 or 2 Speed)</td>
<td>HAFC101</td>
<td>ARH-1, ARH-2, ARH-3</td>
<td>WA300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Zone Hydro Air Fan Control with Time Delays (1 or 2 Speed)</td>
<td>HAFC201</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### REPLACEMENT PARTS

<table>
<thead>
<tr>
<th>Replacement Part</th>
<th>TACO</th>
<th>ARGO</th>
<th>ERIE</th>
<th>HONEYWELL</th>
<th>WHITE-ROGERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 Volt Replacement Relay</td>
<td>SR024-001RP</td>
<td>R-35</td>
<td></td>
<td>EXP10</td>
<td></td>
</tr>
<tr>
<td>120 Volt Replacement Relay</td>
<td>SR120-001RP</td>
<td>R-49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### NOTES:

1. Does not have both normally open and normally closed contacts.
2. Has only one set of normally open contacts (SPST).
3. Does not have optional priority.
4. Can be expanded to five and six zones with the addition of EXP10 relays.
5. Argo ARM units are expandable to 10 zones using special controls (ARM-1, ARM-4) with a phone jack.
6. TACO switching relays can be expanded up to 20 zones using any combination of -EXP models with no special connections.
7. Includes only one data port for adding data port modules.
8. All TACO zone valve controls include an extra set of dry contacts (N/O, Common, N/C).
9. VL500 is only 5 zones, 4 normal and 1 priority.