<table>
<thead>
<tr>
<th>Topic</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching Relays – Single Zone Wiring</td>
<td>2</td>
</tr>
<tr>
<td>Switching Relays – NON EXP Connected Together with Priority</td>
<td>3–9</td>
</tr>
<tr>
<td>Switching Relays – EXP Connected Together with Priority</td>
<td>10–11</td>
</tr>
<tr>
<td>Switching Relays – Multiple Indirect Hot Water Heaters</td>
<td>12–13</td>
</tr>
<tr>
<td>Switching Relays – EXP Connected To Reset Controls (PC700, 702 &amp; 705)</td>
<td>14–21</td>
</tr>
<tr>
<td>Zone Valve Controls – NON EXP Connected Together with Priority</td>
<td>22–27</td>
</tr>
<tr>
<td>Zone Valve Controls – EXP Connected Together with Priority</td>
<td>28–31</td>
</tr>
<tr>
<td>Zone Valve Controls – Connected To Reset Controls (PC700, 702 &amp; 705)</td>
<td>32–39</td>
</tr>
<tr>
<td>Hydro Air Fan Controls (HAFC 101 &amp; 201)</td>
<td>40–44</td>
</tr>
<tr>
<td>Specialty Thermostat and Zone Valve Wiring</td>
<td>45–50</td>
</tr>
<tr>
<td>Instruction Sheets</td>
<td>51–60</td>
</tr>
<tr>
<td>Low Water Cutoff and Industrial Flow Switch</td>
<td>61–69</td>
</tr>
<tr>
<td>Aquastat Wiring</td>
<td>70–74</td>
</tr>
<tr>
<td>Standard Terms and Definitions</td>
<td>75</td>
</tr>
<tr>
<td>Cross Reference</td>
<td>76–77</td>
</tr>
</tbody>
</table>
# TACO 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>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>HAFC101</td>
<td>Hydro Air Fan Control</td>
</tr>
<tr>
<td>HAFC201</td>
<td>Hydro Air Fan Control with Optional Time Delays</td>
</tr>
</tbody>
</table>

---

Do it once. Do it right.
SR501 Switching Relay Wiring

**TYPICAL WIRING**
(COLD START)

- **THERMOSTAT** [T]
- **SR501 1 ZONE SWITCHING RELAY**
- **120 VAC INPUT**
- **NH3 4466 5**
- **TO: 120 VAC POWER**
- **TO: TT ON BOILER**
- **CIRCULATOR**

**ALTERNATIVE WIRING**
(TANKLESS COIL)

- **THERMOSTAT** [T]
- **SR501 1 ZONE SWITCHING RELAY**
- **120 VAC INPUT**
- **NH3 4466 5**
- **TO: 120 VAC POWER**
- **TO: ZZ ON BOILER**
- **CIRCULATOR**

**ALTERNATIVE WIRING**
(24 VAC POWERED INPUT SIGNAL)

- **THERMOSTAT** [T]
- **SR501 1 ZONE SWITCHING RELAY**
- **120 VAC INPUT**
- **NH3 4466 5**
- **TO: 120 VAC POWER**
- **TO: TT ON BOILER**
- **CIRCULATOR**

* Remove jumper. Do not connect power to N and H terminals.

* T STAT light will go on and off with 24 VAC signal. Power light will always be off.
Three Zone Switching Relay Controlling Another SR502/503 Switching Relay

**SR 503**

**Three Zone Switching Relay with Optional Priority**

- **24 VAC Power**
- **Fuse 1 AMP**
- **Zone 1**
- **Zone 2**
- **Zone 3**

**Slave**

- **24 VAC Power**
- **Fuse 1 AMP**
- **Zone 1**
- **Zone 2**
- **Zone 3**

**Master**

- **24 VAC Power**
- **Fuse 1 AMP**
- **Zone 1**
- **Zone 2**
- **Zone 3**

**Power**

- **Zone 1**
- **Zone 2**
- **Zone 3**

**120 Volt Circulators**

- **DHW Heater Circulator**

**Jumper**

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

**Priority On**

Via jumper placement

**Priority Off**

Via jumper placement

**To:** "TT" on Aquastat Control

**Boiler**
Priority Zoning Circulator Controlling 2 SR504/506 Switching Relays

MASTER

PRIORITY ZONING CIRCULATOR

<table>
<thead>
<tr>
<th>THERMOSTAT</th>
<th>BOILER</th>
<th>PRIORITY</th>
<th>POWER IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>LIV</td>
<td>LIV</td>
<td>LIV</td>
<td>LIV</td>
</tr>
</tbody>
</table>

ZONE 4

ON

OFF

PRIORITY

120V RELAY

FUSE 1 AMP

24 VAC POWER

TO: "TT" ON BOILER

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY

WITH OPTIONAL PRIORITY

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY

WITH OPTIONAL PRIORITY

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY

WITH OPTIONAL PRIORITY

AQUASTAT ON DHW HEATER

A

120 VAC INPUT

BOILER

120 VAC INPUT

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

T

T

T

T

H

N

FOUR ZONE SWITCHING RELAY

WITH OPTIONAL PRIORITY

SLAVESLAVE

PRIORITY

OFF

PRIORITY

OFF

TO: "TT" ON BOILER

REMOVE JUMPER

REMOVE JUMPER
SR502/503 Switching Relay Controlling 2 SR504/506 Switching Relays

MASTER

AQUASTAT ON
DHW HEATER

POWER
ZONE 1
ZONE 2
ZONE 3
ZONE 4

PRIORITY ON

24 VAC
POWER

SR 503

TWO ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

FUSE 1 AMP

N P ZC H X1 ZR

ZONE 1 ZONE 2 ZONE 3 ZONE 4

SR 503

PRIORITY OFF

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

24 VAC
POWER

ZONE 4

PRIORITY OFF

120V RELAY

FUSE 1 AMP

X X END SWITCH ZC ZR ZONE1 ZONE2 ZONE3 ZONE4 POWER 120 VOLT CIRCULATORS INPUT

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

24 VAC
POWER

ZONE 4

PRIORITY OFF

120V RELAY

FUSE 1 AMP

X X END SWITCH ZC ZR ZONE1 ZONE2 ZONE3 ZONE4 POWER 120 VOLT CIRCULATORS INPUT

TO: "TT" ON BOILER

120 VAC INPUT

BOILER

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

24 VAC
POWER

ZONE 4

PRIORITY OFF

120V RELAY

FUSE 1 AMP

X X END SWITCH ZC ZR ZONE1 ZONE2 ZONE3 ZONE4 POWER 120 VOLT CIRCULATORS INPUT

TO: "TT" ON BOILER

120 VAC INPUT

BOILER

SLAVE
SR501 Switching Relay Controlling 2 SR504/506 Switching Relays

MASTER

SR501

1 ZONE SWITCHING RELAY

POWER T STAT

N R W

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VOLT CIRCULATORS

120 VAC INPUT

BOILER

TO: "TT" ON BOILER

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY WITH OPTIONAL PRIORITY

120V RELAY

FUSE 1 AMP

24 VAC POWER

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY WITH OPTIONAL PRIORITY

120V RELAY

FUSE 1 AMP

24 VAC POWER

AQUASTAT ON DHW HEATER

DHW CIRCULATOR

120 VAC INPUT

TO: "TT" ON BOILER

BOILER

SR 501 Switching Relay Controlling 2 SR504/506 Switching Relays

MASTER

SR501

1 ZONE SWITCHING RELAY

POWER T STAT

N R W

ZONE 1 ZONE 2 ZONE 3 ZONE 4

120 VOLT CIRCULATORS

120 VAC INPUT

BOILER

TO: "TT" ON BOILER

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY WITH OPTIONAL PRIORITY

120V RELAY

FUSE 1 AMP

24 VAC POWER

SLAVE

SR 504

FOUR ZONE SWITCHING RELAY WITH OPTIONAL PRIORITY

120V RELAY

FUSE 1 AMP

24 VAC POWER

AQUASTAT ON DHW HEATER

DHW CIRCULATOR

120 VAC INPUT

TO: "TT" ON BOILER

BOILER
2 Expandable Switching Relays Connected Together

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

SLAVE

MASTER

BOILER

TO: "TT" ON BOILER

120 VAC INPUT

THERMOSTATS

SR504-EXP
FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

SR506-EXP
SIX ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY
3 Expandable Switching Relays Connected Together

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

**Master**
- **SR504-EXP**
- **Four Zone Switching Relay with Optional Priority**
- **Power**
- **120V Relay**
- **Fuse 1 Amp**
- **24 Vac Power**
- **Switch Settings**
  - **Master/Slave**: Slave
  - **Reset/Normal**: Normal
  - **Priority Zone**: Off

**Slave**
- **SR504-EXP**
- **Four Zone Switching Relay with Optional Priority**
- **Power**
- **120V Relay**
- **Fuse 1 Amp**
- **24 Vac Power**
- **Switch Settings**
  - **Master/Slave**: Master
  - **Reset/Normal**: Normal
  - **Priority Zone**: On

**DHW Circulator**
- **DHW Circulator**
- **AQUASTAT ON DHW HEATER**

**BOILER**
- **TO: “TT” ON BOILER**

**Power Control Interface**
- **Reset Normal**
- **Power**
- **Zone 1**
- **Zone 2**
- **Zone 3**
- **Zone 4**

**Jumper**
- **X**
- **ZC**
- **ZR**
- **Zone 1**
- **Zone 2**
- **Zone 3**
- **Zone 4**

**SR506-EXP**
- **Six Zone Switching Relay with Optional Priority**
- **Power**
- **120V Relay**
- **Fuse 1 Amp**
- **24 Vac Power**
- **Switch Settings**
  - **Master/Slave**: Slave
  - **Reset/Normal**: Normal
  - **Priority Zone**: Off

**Six Expandable Switching Relays Connected Together**
2 Indirect Water Heaters with Priority Connected to Standard Switching Relays
2 Indirect Water Heaters with Priority Connected to EXP Switching Relays

Schematic Diagram:
- SR502: Two Zone Switching Relay with Optional Priority
- SR504-EXP: Four Zone Switching Relay with Optional Priority
- Power Connections: 120V Circulators, 24VAC, Fuses (1A)
- Control Interfaces: Slave, Master, Reset/Normal, Priority Zone
- Switch Settings:
  - Master/Slave: Master
  - Reset/Normal: Normal
  - Priority Zone: On
- Additional Components: DHW Circulators, Boiler, Aquastats

Diagram Notes:
- Switch Settings Master/Slave: Slave
- Reset/Normal: Normal
- Priority Zone: Off

Legend:
- A: AQUASTATS ON DHW HEATERS
- N, P, ZC, H: Jumpers
- SR504-EXP: Four Zone Switching Relay with Optional Priority
- ZONE1, ZONE2, ZONE3, ZONE4
- 2 Indirect Water Heaters with Priority Connected to EXP Switching Relays
PC700 Boiler Reset Control Connected to EXP Switching Relay

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

**SR 504-EXP**

**POWER CONTROL INTERFACE**
- **MASTER**
- **SLAVE**
- **PLUG-IN CARDS**
- **120V RELAY**
- **FUSE 1 AMP**
- **24 VAC POWER**

**BOILER SENSOR**

**OUTDOOR SENSOR**

**BOILER**

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

**120 VAC INPUT**

**TO: “TT” ON BOILER**

**JUMPER**

**120 VOLT CIRCULATORS**

**BOILER SENSOR**

**PC700 Boiler Reset Control Connected to EXP Switching Relay**
PC702 2-Stage Boiler Reset Control Connected to EXP Switching Relay

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

WIRING NEEDED ONLY IF PRIORITY ZONE IS DHW
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

**FOUR ZONE SWITCHING RELAY WITH OPTIONAL PRIORITY**

**120V RELAY**

**FUSE 1 AMP**

**24 VAC POWER**

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

**120 VOLT CIRCULATORS**

**SYSTEM CIRCULATOR (OPTIONAL)**
PC702 2-Stage Boiler Reset Control Connected to 2 EXP Switching Relays

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

- **MASTER**
  - POWER CONTROL INTERFACE
  - 24 VAC POWER
  - 120V RELAY
  - FUSE 1 AMP
  - JUMPER
  - SYSTEM CIRCULATOR (OPTIONAL)
  - 120 VAC INPUT

- **SLAVE**
  - POWER CONTROL INTERFACE
  - 24 VAC POWER
  - 120V RELAY
  - FUSE 1 AMP
  - JUMPER
  - SYSTEM CIRCULATOR (OPTIONAL)
  - 120 VAC INPUT

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

**120 VOLT CIRCULATORS**
- ZC
- ZR
- X
- X END

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

- **FOUR ZONE SWITCHING RELAY**
  - WITH OPTIONAL PRIORITY
  - ZONE 4
  - ON
  - OFF

- **120 VAC INPUT**

**120 VOLT CIRCULATORS**
- ZC
- ZR
- X
- X END

**WIRING NEEDED ONLY IF PRIORITY ZONE IS DHW**
PC705 Variable Speed Pump Injection Control Connected to 2 EXP Switching Relays

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

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
PLUG-IN CARDS
RESET
NORMAL
SLAVE

SYSTEM CIRCULATOR
(INJECTION CIRCULATOR)

TO: "T" ON BOILER

24 VAC POWER

OUTDOOR SENSOR

PC705-2

BOILER

B L R G

THERMOSTATS

MASTER
ZONE 4 PRIORITY ON OFF

ZONE 1 ZONE 2
ZONE 3 ZONE 4

POWER

SLAVE
ZONE 4 PRIORITY ON OFF

ZONE 1 ZONE 2
ZONE 3 ZONE 4

POWER

SYSTEM CIRCULATOR (OPTIONAL)

(SEE NOTE A ON PAGE 16)

(SEE NOTE B ON PAGE 16)

THERMOSTATS

FOUR ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

120V RELAY
FUSE 1 AMP
24 VAC
POWER
MASTER
PLUG-IN CARDS
RESET
NORMAL
SLAVE

SYSTEM CIRCULATOR
(INJECTION CIRCULATOR)

TO: "T" ON BOILER

24 VAC POWER

OUTDOOR SENSOR

PC705-2

BOILER

B L R G

THERMOSTATS

MASTER
ZONE 4 PRIORITY ON OFF

ZONE 1 ZONE 2
ZONE 3 ZONE 4

POWER

SLAVE
ZONE 4 PRIORITY ON OFF

ZONE 1 ZONE 2
ZONE 3 ZONE 4

POWER

SYSTEM CIRCULATOR (OPTIONAL)

(SEE NOTE A ON PAGE 16)

(SEE NOTE B ON PAGE 16)
PC702 and PC705 Controls Connected to 2 EXP Switching Relays

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

**FOUR ZONE SWITCHING RELAY**
120V Relay
Fuse 1 Amp

**PLUG-IN CARDS**
Zone 1, Zone 2, Zone 3, Zone 4

**THERMOSTATS**

**SR 504-EXP**
Four Zone Switching Relay with Optional Priority

**MASTER**
Zone 4
On
Off
Priority
120V input

**SLAVE**
Zone 4
On
Off
Priority
120V input

**POWER CONTROL INTERFACE**
24 VAC Power

**POWER**
Zone 1, Zone 2, Zone 3, Zone 4

**SYSTEM CIRCULATOR**
(Optional Location)

**WIRING NEEDED ONLY IF**
Priority Zone is DHW

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

**PC702**

**BOILER #1**

**BOILER #2**

**PC705-2**

**SYSTEM CIRCULATOR**
(Optional Location)

**OUTDOOR SENSOR**

**SUPPLY SENSOR**

**BATTERY SENSOR**

**INJECTION CIRCULATOR**

**DHW DEMAND**

**(SEE NOTE A ON PAGE 16)**

**(SEE NOTE B ON PAGE 16)**

**120 VAC INPUT**
ZVC403/405 with System Pump

- Boiler
- 24 VAC
- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Fuse (5 AMP MAX)
- TT TT TT TT TT
- ZVC 405
- 1234 1234 1234 1234 1234
- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- 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

- Five Zone Zone Valve Control
- 2 WIRE ZONE VALVE
- 3 WIRE ZONE VALVE
- 4 WIRE ZONE VALVE

- System Pump
- Boiler and System Pump 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.
BOILER TURNS 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 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.
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.
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

**Master**
- White: 120 VAC Input
- Black: 24 VAC
- **Power Controls**: Slave
- **Mode**: Master
- **Expansion**: 1 2 3 4

**Slave**
- White: 120 VAC Input
- Black: 24 VAC
- **Power Controls**: Slave
- **Mode**: Normal
- **Expansion**: 1 2 3 4

**System Pump and Boiler Turn On When Any Zone Valve Opens.**

- **White**: 120 VAC Input
- **Black**: 24 VAC
- **Expansion**: 1 2 3 4

- **Taco, Inc. ZVC406-EXP**
- **Six Zone Zone Valve Control**
- **With Optional Priority**

- **T-Stat**: T1 T2 T3 T4 T5 T6
- **Power On**: Valve 1 Valve 2 Valve 3 Valve 4 Valve 5 Valve 6
- **Power In**: 24 VAC Factory Installed Transformer 120 VAC Input White Black

- **Dry Contacts**: N/O COM Zone 6 Relay N/C End Switch
- **Pump End Switch**: A
- **Boiler**: 24 VAC Factory Installed Transformer 120 VAC Input White Black

**Switch Settings**
- **Master/Slave**: Slave
- **Reset/Normal**: Normal
- **Priority Zone**: Off
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
- POWER IN: 24 VAC
- 120 VAC INPUT
- 24 VAC
- WHITE
- BLACK

SLAVE
- POWER IN: 24 VAC
- 120 VAC INPUT
- 24 VAC
- WHITE
- BLACK

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

SEE NOTE
120 VAC INPUT

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

SEE NOTE
2 EXP Zone Valve Controls Connected Together with System and DHW Pumps

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

MASTER

TO BOILER
AQUASTAT RELAY
DHW PUMP
SYSTEM PUMP

JUMPER 3 & 4

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

SLAVE

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

See Note
2 EXP Zone Valve Controls Connected Together with System, DHW and Secondary Pumps

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

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

MASTER

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

SLAVE

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.
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.
PC702 2-Stage Boiler Reset Control Connected To EXP Zone Valve Control

**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.
PC705 Variable Speed Pump Injection Control Connected To EXP Zone Valve Control

- **Mode**: Normal/Reset
- **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.**
PC700 Boiler Reset Control Connected To 2 EXP Zone Valve Controls

**MASTER**

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

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

**SLAVE**

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

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

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

**Wiring Needed Only If Priority Zone Is DHW**

**Diagram Description**

- **Master**
  - 24 VAC
  - White and Black wires
  - Power Controls: Master
  - Reset: Normal
  - Priority Zone: On or Off

- **Slave**
  - 24 VAC
  - White and Black wires
  - Power Controls: Slave
  - Reset: Normal
  - Priority Zone: Off

- **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
  - 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 on the priority zone.

---

**SYSTEM CIRCULATOR** (OPTIONAL LOCATION)

**INDIRECT WATER HEATER**

AQUASTAT OR THERMOSTAT

---

**SWITCH SETTINGS**

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

---

**DRAIN PUMP**

**NOTE** (SEE NOTE B ON PAGE 16)
PC700 and PC705 Connected to 2 EXP Zone Valve Controls

PC705-2

System controls the boiler and system circulator when any zone valve opens.

24 VAC Factory Installed Transmitter

120 VAC Input

White

Black

System circulator and boiler turn on when any zone valve opens.

DHW circulator turns on only when priority zone calls.

(See note B on page 16)

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.
PC702 and PC705 Connected To 2 EXP Zone Valve Controls

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

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

Switch SETTINGS

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

DHW Circulator turns on only when priority zone calls.

System circulator and boiler turn on when any zone valve opens.

Indirect Water Heater AqUASTAT or Thermostat

24 VAC

System circulator

Induction circulator

Secondary sensor

NOTE B ON PAGE 16

Wiring needed only if priority zone is DHW.
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.

THERMOSTAT

Optional Power Wire to Thermostat that Requires 24VAC

To: Aquastat on Return Line of Hydro Coil

CRWYGTT
THERMOSTAT AQUASTAT

HAFC101 HYDRO AIR FAN CONTROL

BOILER AIR HANDLER

X X C R Y G G

Dry Contacts To: "T T" on Boiler or Switching Relay

Power On Call for Heat Fan, Cooling Fan, Heating

Outdoor Condenser Unit

24 VAC Fan Relays

M

Low High
**HAFC201 with 1 Speed Air Handler**

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

**Diagram:**
- **BOILER**
- **2 SPEED AIR HANDLER**
- **OUTDOOR CONDENSER UNIT**
- **THERMOSTAT**
- **HAF C101 HYDRO AIR FAN CONTROL**
- **FUSE 1 AMP**
- **DHW HEATER**
- **AQUASTAT**
- **24 VAC POWER**
- **120 VAC INPUT**
- **ZONES 1 TO 4**
- **CALL FOR HEAT**
- **FAN, COOLING**
- **FAN, HEATING**

**Options:**
- Optional power wire to thermostat that requires 24 VAC
- Power PM:
  - Call for heat
  - Fan, cooling
  - Fan, heating

**Connections:**
- BOILER TO: “TT” ON BOILER
- OUTDOOR CONDENSER UNIT TO: AQUASTAT ON RETURN LINE OF HYDRO COIL
- THERMOSTAT TO: AQUASTAT ON RETURN LINE OF HYDRO COIL
- THERMOSTAT TO: AQUASTAT ON RETURN LINE OF HYDRO COIL
- THERMOSTAT TO: AQUASTAT ON RETURN LINE OF HYDRO COIL
- THERMOSTAT TO: AQUASTAT ON RETURN LINE OF HYDRO COIL

**Zones:**
- Zone 1
- Zone 2
- Zone 3
- Zone 4

**Relays:**
- 120V RELAY
- Power
- Zone 1
- Zone 2
- Zone 3
- Zone 4

**Circulators:**
- 120 VOLT CIRCULATORS

**Additional Components:**
- SR 504 FOUR ZONE SWITCHING RELAY WITH OPTIONAL PRIORITY
- 24 VAC POWER
- FUSE 1 AMP
- JUMPER
3 Wire Thermostat Connected to TACO Switching Relay

- **3 WIRE THERMOSTAT**
  - COM
  - W
  - R
  - T

- **FOUR ZONE SWITCHING RELAY WITH OPTIONAL PRIORITY**
- **ZONE 1 ZONE 2 ZONE 3 ZONE 4**

- **120V RELAY**
- **24 VAC POWER**
- **FUSE 1 AMP**
- **SR 504**
- **120 VOLT CIRCULATORS**

- **TO: "TT" ON BOILER**
- **BOILER**
3 Wire Thermostat Connected to TACO Zone Valve Control

- **THERMOSTAT**: Five Zones
- **TVC 405**: Five Zone Valve Control
- **Transformer**: 120 VAC Input, 24 VAC Output
- **Connectors**: White, Black, Common
- **Motor End Switch**: 1, 2, 3, 4
- **Power**: 24 VAC, Factory Installed Transformer
- **Valves**: Zone 1-5
- **Connections**: TT to T&T on Boiler or Pump Relay

- **2 Wire Zone Valve** (No End Switch)
- **3 Wire Zone Valve** (TACO Type)
- **4 Wire Zone Valve** (Honeywell Type)
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

3 WIRE ZONE VALVE (TACO TYPE)

4 WIRE ZONE VALVE (HONEYWELL TYPE)
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

THERMOSTAT

THERMOSTAT

THERMOSTAT

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>TT (Rt)</td>
<td></td>
</tr>
<tr>
<td>GRAY</td>
<td>4</td>
</tr>
<tr>
<td>BLACK</td>
<td>6</td>
</tr>
</tbody>
</table>

24 VAC FACTORY INSTALLED TRANSFORMER

POWER IN

24 VAC FACTORY INSTALLED TRANSFORMER

WHITE BLACK

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

ZVC 405
FIVE ZONE ZONE VALVE CONTROL

ZONE 1
1 2 3 4

ZONE 2
1 2 3 4

ZONE 3
1 2 3 4

ZONE 4
1 2 3 4

ZONE 5
1 2 3 4

HONEYWELL VC (SPST) HYDRONIC ZONE VALVE SERIES 40 & 80

3 WIRE ZONE VALVE (TACO TYPE)

4 WIRE ZONE VALVE (HONEYWELL TYPE)

TO T&T ON BOILER OR PUMP RELAY

BLACK BLACK RED RED

MOTOR END SWITCH
570 Zone Valve to Switching Relay

THERMOSTAT

24 VAC TRANSFORMER

SR 503
THREE ZONE SWITCHING RELAY
WITH OPTIONAL PRIORITY

ZONE 1
ZONE 2
ZONE 3

JUMPERS
N   P   ZC   H    X   ZR1
X2

TO: 120 VAC POWER (NEUTRAL)
TO: 120 VAC POWER (HOT)
TO: "TT" ON AQUASTAT CONTROL
TO: "TT" ON AQUASTAT CONTROL

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

SIX ZONE ZONE VALVE CONTROL WITH OPTIONAL PRIORITY

POWER IN 24 VAC FACTORY INSTALLED TRANSFORMER

120 VAC INPUT

WHITE 24 VAC BLACK

WHITE 24 VAC BLACK

120 VAC INPUT

TO BOILER AQUASTAT RELAY

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

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.
**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 NUMBER</th>
<th>NUMBER OF ZONES</th>
<th>TRANSFORMER VOLTAGE</th>
<th>MAXIMUM COMBINED LOAD</th>
<th>DIMENSIONS OF ENCLOSURE Width</th>
<th>Height</th>
<th>DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR501</td>
<td>1 Zone</td>
<td>120 VAC Input</td>
<td>7.2 amps</td>
<td>4 1/4&quot;</td>
<td>5 1/4&quot;</td>
<td>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. 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, 12-20 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:**
- **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
- **6 n/c** Normally closed terminal
- **5** Common terminal for 6 n/o and 6 n/c

**Terminal Description:**

**TACO SR501 REPLACEMENT CROSS-REFERENCE**

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>MODEL</th>
<th>CONNECTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argo</td>
<td>AMRA21</td>
<td>1 2 3 4 5 6 T</td>
</tr>
<tr>
<td>Argo</td>
<td>AMRA22</td>
<td>1 2 3 4 5 6 NC 6 NC 8 NC R/T C/T C</td>
</tr>
<tr>
<td>Colombus</td>
<td>MRT10</td>
<td>1 2 3 4 5 6 6 NC R/T C/T C</td>
</tr>
<tr>
<td>Erie</td>
<td>SR100</td>
<td>1 2 3 4 5 6 6 NC R/T C/T C</td>
</tr>
<tr>
<td>Honeywell</td>
<td>RAB9A</td>
<td>1 2 3 4 T T</td>
</tr>
<tr>
<td>Honeywell</td>
<td>RAB32A</td>
<td>1 2 3 4 T T</td>
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<tr>
<td>Honeywell</td>
<td>RBA45A</td>
<td>1 2 3 4 5 6 T T</td>
</tr>
<tr>
<td>White-Rogers</td>
<td>B89-189</td>
<td>1 2 3 4 T T</td>
</tr>
<tr>
<td>White-Rogers</td>
<td>B829-845</td>
<td>1 2 3 4 5 6 T T</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.

Visit our web site at: http://www.taco-hvac.com
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
6 Normally open terminal
5 Common terminal for 6

Specifications:
<table>
<thead>
<tr>
<th>PRODUCT NUMBER</th>
<th>NUMBER OF ZONES</th>
<th>TRANSFORMER VOLTAGE</th>
<th>VOLTAGE COMBINED LOAD</th>
<th>DIMENSIONS OF ENCLOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR501-845RP</td>
<td>1 Zone</td>
<td>120 VAC Input</td>
<td>7.2 amps</td>
<td>4 1/4&quot; 5 1/4&quot; 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. 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 Sheet
**Instruction Sheet**

**SR502 & SR503 Switching Relay**

---

**Cold Start Boiler Application**

**Operation:** When the thermostat calls for heat, the appropriate circulator is energized and the isolated end switch (X₁ and X₂) will start the boiler.

**Jumper Placement:** The jumper should be placed between terminals ZC and H. Connect the isolated end switch, X₁ and X₂ to the boiler aquastat control. **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.

---

**Tankless Coil Boiler Application**

**Operation:** When any thermostat calls for heat, the boiler is given a signal to start. The appropriate circulator is energized only when the boiler temperature is above the set low limit.

**Jumper Placement:** The jumper should be placed between terminals H and X₁. Connect terminal ZC to ZC terminal on the aquastat control. Connect terminal ZR to ZR terminal on the aquastat control. Confirm polarity is consistent between boiler aquastat and switching relay. **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:**

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>SR502</td>
<td>2 with Priority</td>
<td>120 VAC Input</td>
<td>15 amps</td>
<td>10 1/4” x 6 3/4” x 2 3/4”</td>
</tr>
<tr>
<td>SR503</td>
<td>3 with Priority</td>
<td>120 VAC Input</td>
<td>15 amps</td>
<td>10 1/4” x 6 3/4” x 2 3/4”</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.

---

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

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

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

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

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

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

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

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

**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

**Specifications:**

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of Zones</th>
<th>Power</th>
<th>Transformer Voltage</th>
<th>Maximum Combined Load</th>
<th>Dimensions of Enclosure</th>
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</thead>
<tbody>
<tr>
<td>SR503-EXP</td>
<td>3 with Priority</td>
<td>3</td>
<td>120 VAC Input</td>
<td>20 amps</td>
<td>10 1/4&quot; x 6 3/4&quot; x 2 3/4&quot;</td>
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<tr>
<td>SR504-EXP</td>
<td>4 with Priority</td>
<td>3</td>
<td>120 VAC Input</td>
<td>20 amps</td>
<td>10 1/4&quot; x 6 3/4&quot; x 2 3/4&quot;</td>
</tr>
<tr>
<td>SR506-EXP</td>
<td>6 with Priority</td>
<td>3</td>
<td>120 VAC Input</td>
<td>20 amps</td>
<td>11 3/4&quot; x 7 1/2&quot; x 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.

**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. 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 3 in.lbs. max torque.
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</th>
<th>Number of Zones</th>
<th>Transformer Voltage</th>
<th>Max Output at 24 VAC</th>
<th>Dimensions of Enclosure</th>
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<tbody>
<tr>
<td>ZVC403</td>
<td>3 Zone</td>
<td>120 VAC Input</td>
<td>40 VA</td>
<td>10 1/4&quot; x 6 1/2&quot; x 2 5/8&quot;</td>
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<tr>
<td>ZVC405</td>
<td>5 Zone</td>
<td>120 VAC Input</td>
<td>80 VA</td>
<td>11 3/4&quot; x 7 3/4&quot; x 3&quot;</td>
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</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 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
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>
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<tr>
<th>PRODUCT NUMBER</th>
<th>NUMBER OF ZONES</th>
<th>TRANSFORMER VOLTAGE</th>
<th>MAX OUTPUT</th>
<th>DIMENSIONS</th>
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<tr>
<td>ZVC404</td>
<td>4 with Priority</td>
<td>120 VAC Input</td>
<td>40 VA</td>
<td>18$^{1/2}$</td>
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<tr>
<td>ZVC406</td>
<td>6 with Priority</td>
<td>120 VAC Input</td>
<td>80 VA</td>
<td>21$^{1/2}$</td>
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</table>

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

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 Approved
- 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 thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs.
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. Black 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 devices in cascading sequence to SLAVE. Connect thermostat wire (18-22 gauge) between terminals 1, 3, 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.

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>Transformer Voltage</th>
<th>Max Output at 24 VAC</th>
<th>Dimensions of Enclosure Width x Height x Depth</th>
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</thead>
<tbody>
<tr>
<td>ZVC404-EXP</td>
<td>4 with Priority</td>
<td>120 VAC Input</td>
<td>80 VA</td>
<td>11 3/4&quot; x 7 7/8&quot; x 3&quot;</td>
</tr>
<tr>
<td>ZVC406-EXP</td>
<td>4 with Priority</td>
<td>120 VAC Input</td>
<td>80 VA</td>
<td>11 3/4&quot; x 7 7/8&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 VAC.

Features:

- External Indicator Lights
- Plug-In PowerPort Cards
- Switchable Priority
- Simplified Wiring
- Add-On Power Controls
- Works with 2, 3, or 4-Wire
- UL Approved
- Full Voltage
- Isolated End Switch
- Expandable to 20 Zones
- Extra Set of Dry Contacts
- Contractor Friendly PCB
- Board Layout
- Universal Thermostat
- Compatibility
- Stud 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. 16-18 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 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
3. 4 minute on fan delay, in heating mode
4. Pump dry contact activated for 2 minutes every 24 hours (boiler contacts not activated)
5. 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 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, 12-22 gauge wire for 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.

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
W White - Heating signal
Y Yellow - Condenser signal
G Green - Fan signal
TACO, Inc.
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Telephone: (401) 942-8000 FAX: (401) 942-2360.
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Visit our web site at: http://www.taco-hvac.com
** Model number changed from SR501-F

<table>
<thead>
<tr>
<th>PRODUCT NUMBER</th>
<th>ORGANIZATION</th>
<th>POWER INPUT</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</th>
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<td>VAC Input</td>
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<tr>
<td>HAFC101**</td>
<td>1 Zone</td>
<td>24 VAC</td>
<td>5 amps</td>
<td>DPDT</td>
<td>.18</td>
<td>1/6 HP@120VAC</td>
<td>4 1/4” 5 1/4” 2 3/4”</td>
</tr>
<tr>
<td>HAFC201</td>
<td>1 Zone</td>
<td>24 VAC</td>
<td>5 amps</td>
<td>DPDT</td>
<td>.18</td>
<td>1/6 HP@120VAC</td>
<td>4 1/4” 5 1/4” 2 3/4”</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 @ 120 VAC.
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.

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 Switching Relay 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.

Typical Settings:

<table>
<thead>
<tr>
<th>Application</th>
<th>On Time</th>
<th>Off Time</th>
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</thead>
<tbody>
<tr>
<td>Pump Exercise</td>
<td>30 sec.</td>
<td>2 weeks</td>
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<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>
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</table>

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 Switching Relay unless a PC600 is also installed. Align the connector on the base of the priority protection card with the PowerPort terminal on the Expandable Switching Relay 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.
# Taco Low Water Cutoff Replacement Guide

<table>
<thead>
<tr>
<th>Taco</th>
<th>McDonnell &amp; Miller</th>
<th>Hydrolevel</th>
<th>Honeywell</th>
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<td>LTA1203N-1</td>
<td>900</td>
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<td>RW700A1031</td>
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*Bold / Italics Indicates Discontinued Part Number*
120 VAC Models with 120 VAC Burner Circuits

LTx120x
NC COM NO H N GND P

**Burner Circuit**

120 VAC Circuit

Neutal

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<td>w/Red &amp; Amber LEDs</td>
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<td>Series 750</td>
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| 1 2 3 4 5           |

120 VAC Models with 24 VAC Burner Circuits

LTx120x
NC COM NO H N GND P

**Burner Circuit**

24 VAC Circuit

Neutal

<table>
<thead>
<tr>
<th>450, 550, 650 &amp; 750</th>
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<tbody>
<tr>
<td>2 1 P1 P2 A</td>
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<table>
<thead>
<tr>
<th>PS-801/851-120</th>
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<tbody>
<tr>
<td>w/Red &amp; Amber LEDs</td>
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<tr>
<td>Series 750</td>
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| 1 2 3 4 5           |

24 VAC Transformer
24 VAC Models with 24 VAC Burner Circuits

24 VAC Models with 120 VAC Burner Circuits
Taco LN Series 120 Volt LWCO Competitive Wiring Cross Reference

120 VAC Models with 120 VAC Burner Circuits

LNA120S

<table>
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<tr>
<th>N</th>
<th>H</th>
<th>COM</th>
<th>NC</th>
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120 VAC CIRCUIT

BURNER CIRCUIT

RB-120

1 2 3 4 5

120 VAC CIRCUIT

BURNER CIRCUIT

RB-122

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<th>N</th>
<th>H</th>
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120 VAC CIRCUIT

BURNER CIRCUIT

170

GN H P1 P2 A

120 VAC CIRCUIT

BURNER CIRCUIT

120 VAC Models with 24 VAC Burner Circuits

LNA120S

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<tr>
<th>N</th>
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120 VAC CIRCUIT

24 VAC TRANSFORMER

BURNER CIRCUIT

RB-120

1 2 3 4 5

120 VAC CIRCUIT

24 VAC TRANSFORMER

BURNER CIRCUIT

RB-122

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<tr>
<th>N</th>
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<th>C</th>
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</thead>
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120 VAC CIRCUIT

24 VAC TRANSFORMER

BURNER CIRCUIT

170

GN H P1 P2 A

120 VAC CIRCUIT

24 VAC TRANSFORMER

BURNER CIRCUIT
24 VAC Models with 24 VAC Burner Circuits

**LNA024S**

- **N**
- **H**
- **COM**
- **NC**
- **NO**

**RB-24**

- **Red Wire**
- **White Wire**
- **Yellow Wire**
- **Yellow Wire**

24 VAC Models with 120 VAC Burner Circuits

**LNA024S**

- **N**
- **H**
- **COM**
- **NC**
- **NO**

**24 VAC Transformer**
Wiring TACO LN or LT 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

24VAC SUPPLY 50/60 Hz

- Burner

N
H

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.

* 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 LN 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 LN or LT 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

120VAC SUPPLY 50/60 Hz

- Burner

N
H

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:
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If using the LN 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 LN or LT Series 24VAC Low Water Cutoff to Hydrolevel VXT-24 Water Feeder (Non-Display Model)

Set the TACO LT Model’s DOB to 30 seconds and DOM to 15 seconds. Set Safgard as desired.

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 LN or LT Series 120VAC Low Water Cutoff to Hydrolevel VXT-120 Water Feeder (Non-Display Model)

Set the TACO LT Model’s DOB to 30 seconds and DOM to 15 seconds. Set Safgard as desired.

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.
Wiring TACO LN or LT Series 24VAC Low Water Cutoff to Hydrolevel VXT-24 Programmable Water Feeder (Model with Display)

SAFGARD VRTX-24 WATER FEEDER

24VAC SUPPLY 50/60 Hz

Set the TACO LT Model's DOB to 30 seconds and DOM to 15 seconds.
Set Safgard as desired.

WHITE BLACK RED

BURNER

AC POWER OUTPUT CONTACTS

NH COM NC NO

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 LN or LT Series 120VAC Low Water Cutoff to Hydrolevel VXT-120 Programmable Water Feeder (Model with Display)

SAFGARD VRTX-120 WATER FEEDER

120VAC SUPPLY 50/60 Hz

Set the TACO LT Model's DOB to 30 seconds and DOM to 15 seconds.
Set Safgard as desired.

WHITE BLACK RED

BURNER

AC POWER OUTPUT CONTACTS

NH COM NC NO

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.
<table>
<thead>
<tr>
<th>Taco</th>
<th>Potter</th>
<th>McDonnell &amp; Miller</th>
<th>Johnson Controls / Penn</th>
<th>Hydrolevel</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFS01BF-1</td>
<td>IFS-1</td>
<td>FS4-3</td>
<td>F61KB-11 F61LB-1</td>
<td>44-100</td>
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<tr>
<td>IFS01BR-1</td>
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<td>FS4-3-RP</td>
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<tr>
<td>IFS01SF-1</td>
<td>IFSS-1</td>
<td>FS4-3S FS4-3S-E</td>
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<tr>
<td>IFS02BF-1</td>
<td>IFS-2</td>
<td>FS4-3D FS4-3D-E</td>
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<tr>
<td>IFS02SF-1</td>
<td>IFSS-2</td>
<td>FS4-3DS</td>
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<tr>
<td>IFSH1BF-1</td>
<td>IFS-HC-1</td>
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<td>IFSS-HC-1</td>
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<td>IFSH2BF-1</td>
<td>IFS-HC-2</td>
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<tr>
<td>IFSH2SF-1</td>
<td>IFSS-HC-2</td>
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<td>IFSS-WP-2</td>
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<td>IFS-WPS IFS-WP-1</td>
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<td>FS8-W F61MB-1 F61MB-5</td>
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<td>IFSS-WPS IFSS-WP-1</td>
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<td>IFSWTBF-1</td>
<td>IFS-WPT</td>
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<tr>
<td>IFSWTBR-1</td>
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<td>FS4-3RP-T</td>
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</tbody>
</table>
Aquastat Wiring

Honeywell L8124A & C or Equal

Honeywell L8124B or Equal

Honeywell L8124E or Equal
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

HONEYWELL L8124A & C OR EQUAL

TACO SWITCHING RELAY

HONEYWELL L8124G & L OR EQUAL

THERMOSTAT (IF INDEPENDENT ZONE)

HONEYWELL L8124M OR EQUAL

THERMOSTAT (IF INDEPENDENT ZONE)
**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?

\[
\text{Current} = \frac{\text{VA}}{\text{Voltage}}
\]

\[
\frac{40}{24} = 1.6 \text{ Amps}
\]

\[
I = \frac{E}{R} \quad \text{where} \quad I = \text{Current in Amps}
\]

\[
R = \frac{E}{I} \quad R = \text{Resistance in Ohms}
\]

\[
E = I \times R \quad E = \text{Volts}
\]

\[
W = E \times I \quad W = \text{Watts or VA}
\]

\[
I = \frac{W(VA)}{E}
\]

**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.

\[
\text{DPDT} = \text{Double Pole Double Throw}
\]
# 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>
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</thead>
<tbody>
<tr>
<td>SR501</td>
<td>AR821 (1), AR822</td>
<td>SR100</td>
<td>RA89A (2), RA845A (1), RA832A (1)</td>
<td>889-189 (2), 829-845 (1)</td>
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<tr>
<td>SR501-845RP</td>
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<tr>
<td>SR502</td>
<td>AR-861-2 (3)</td>
<td>SR201</td>
<td>R8888A1007</td>
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<tr>
<td>SR503</td>
<td>AR-861-3 (3)</td>
<td>SR301</td>
<td>R8888B1005</td>
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</tr>
<tr>
<td>SR504</td>
<td>AR-842</td>
<td>SR601</td>
<td>R8888B1005</td>
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<tr>
<td>SR506</td>
<td>AR-866</td>
<td>SR601 (4)</td>
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## SWITCHING RELAYS WITH POWERPORT OPTIONS

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<th>ERIE</th>
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<th>WHITE-ROGERS</th>
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<tr>
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<td>ARM-861-DP (5,6), ARM-3P</td>
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<td>SR504-EXP</td>
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<tr>
<td>SR506-EXP</td>
<td>ARM-866-DP (5,6), ARM-6P</td>
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## ZONE VALVE CONTROLS

<table>
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<th>ERIE</th>
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<tr>
<td>ZVC403 (7)</td>
<td>AZ-3</td>
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<td>R8889A1014</td>
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<td>ZVC404 (7)</td>
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<td>ZVC405 (7)</td>
<td>AZ-5</td>
<td>VL500 (8)</td>
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<tr>
<td>ZVC406 (7)</td>
<td>AZ-6P</td>
<td>VL500 (8)</td>
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## ZONE VALVE CONTROLS WITH POWERPORT OPTIONS

<table>
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<tr>
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<tr>
<td>ZVC406-EXP</td>
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## PLUG IN POWERPORT CARDS

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<td>PC605</td>
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<td>PC610</td>
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### TACO Zone Controls Cross-Reference (Continued)

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<td><strong>ADD-ON POWER CONTROLS</strong></td>
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<tr>
<td>Boiler Reset Control</td>
<td>PC700</td>
<td>DPM-2</td>
<td>BB1200</td>
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<tr>
<td>2-Stage Boiler Reset Control</td>
<td>PC702</td>
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<tr>
<td>Variable Speed Pump Injection Mixing Control</td>
<td>PC705</td>
<td></td>
<td>BB3000</td>
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</tr>
</tbody>
</table>

| **FAN CONTROLS** | | | | |
| 1 Zone Hydro Air Fan Control (1 or 2 Speed) | HAFC101 | ARH-1, ARH-2, ARH-3 | WA300 | |
| 1 Zone Hydro Air Fan Control with Time Delays (1 or 2 Speed) | HAFC201 | | | |

| **REPLACEMENT PARTS** | | | | |
| 24 Volt Replacement Relay | SR024-001RP | R-35 | EXP10 | |
| 120 Volt Replacement Relay | SR120-001RP | R-49 | | |

### 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.
   - TACO switching relays can be expanded up to 20 zones using any combination of -EXP models with no special connections.
6. Includes only one data port for adding data port modules.
7. All TACO zone valve controls include an extra set of dry contacts (N/O, Common, N/C).
8. VL500 is only 5 zones, 4 normal and 1 priority.