

APPENDIX A

Panel 104 Chiller & HW Controls Index

Hot Water Valve Control Page 1

Exhaust Fan Control, Boiler Alarms Page 2

Cooling Control Page 3

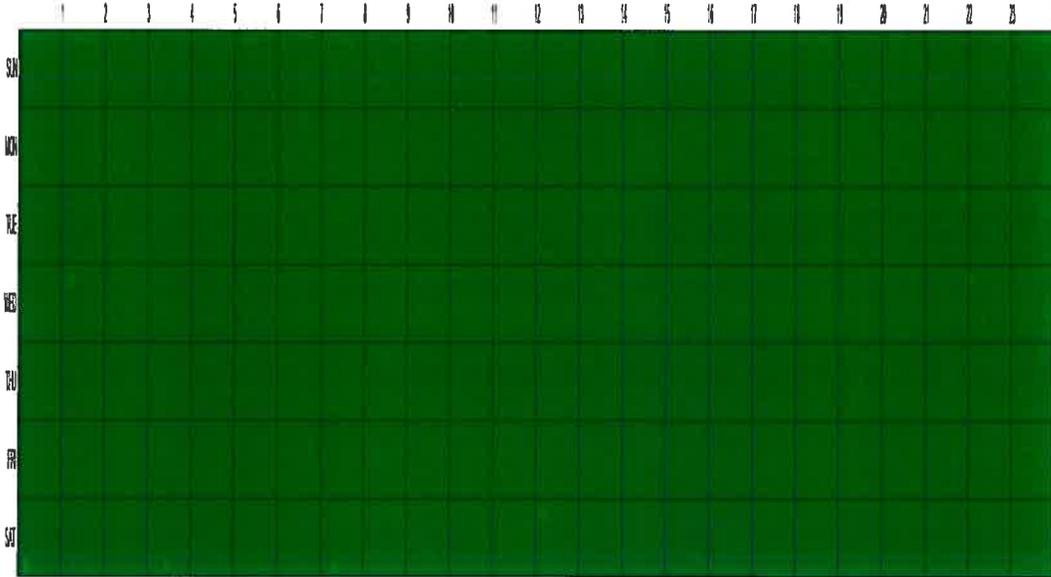
Glycol Hot Water Pump Control Page 4
Glycol Hot Water Temperature Control

Hot Water Radiant Pump 9/10 Control Page 5

Hot Water Radiant Pump 13/14 Control Page 6

Lab VAV Page 7

Pump Status's for 3,4,5,6 / Alarm Collection Page 8

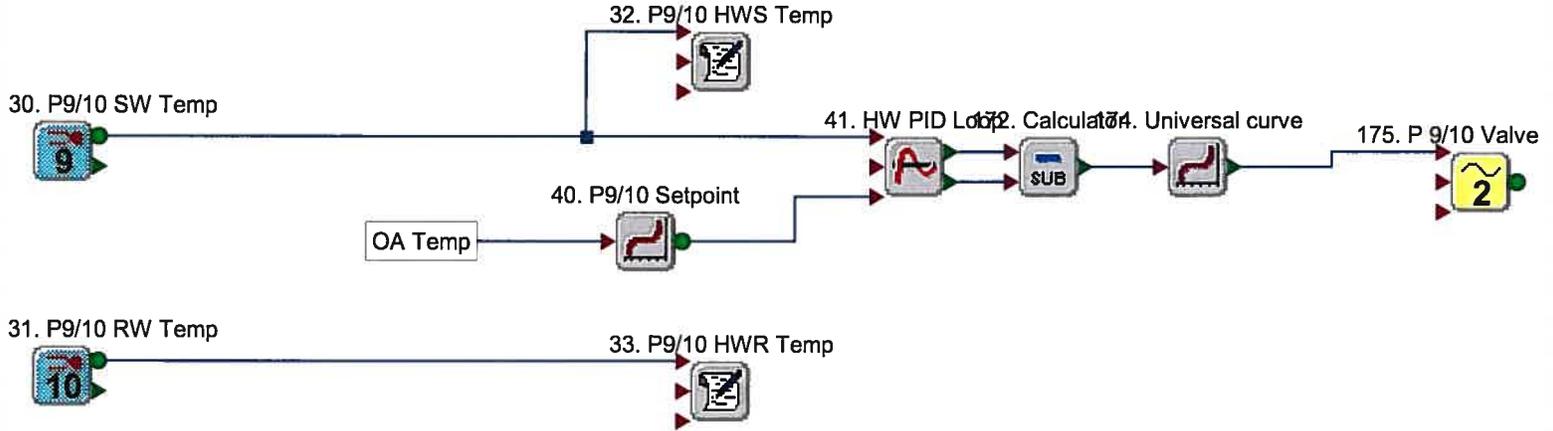


Block: EF6 schedule

- Schedule 1: Sunday 0:00 to Sunday 24:00
- Schedule 2: Monday 0:00 to Monday 24:00
- Schedule 3: Tuesday 0:00 to Tuesday 24:00
- Schedule 4: Wednesday 0:00 to Wednesday 24:00
- Schedule 5: Thursday 0:00 to Thursday 24:00
- Schedule 6: Friday 0:00 to Friday 24:00
- Schedule 7: Saturday 0:00 to Saturday 24:00

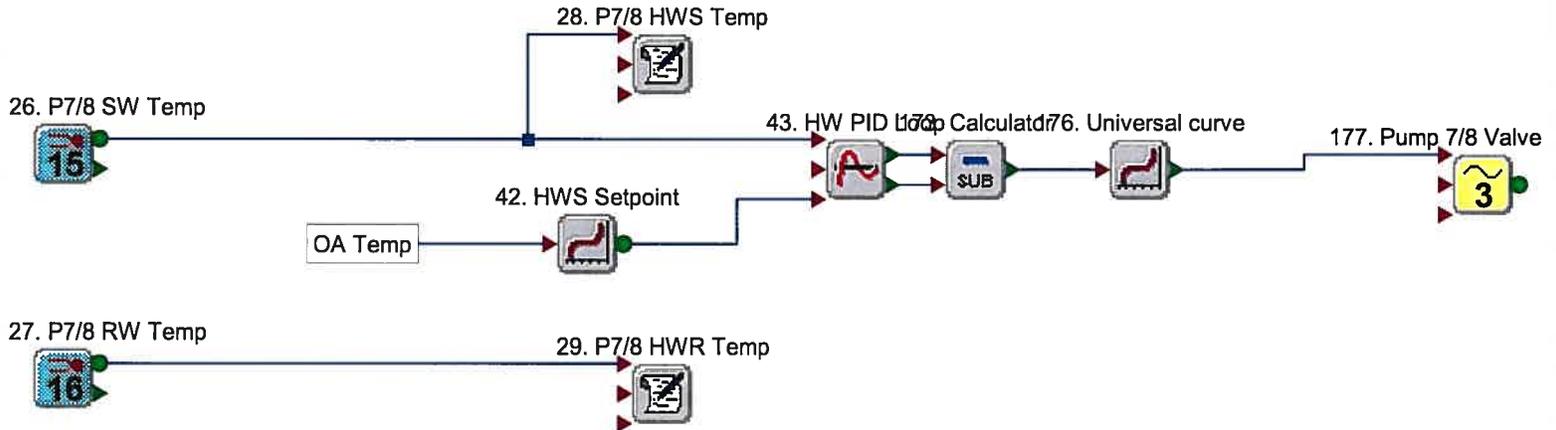
Pumps 9/10 Hot Water Radiation Temperature Control

The three way P 9/10 Valve will modulate to maintain the HW supply temperature at P9/10 Setpoint. This setpoint is determined from the outside air temperature

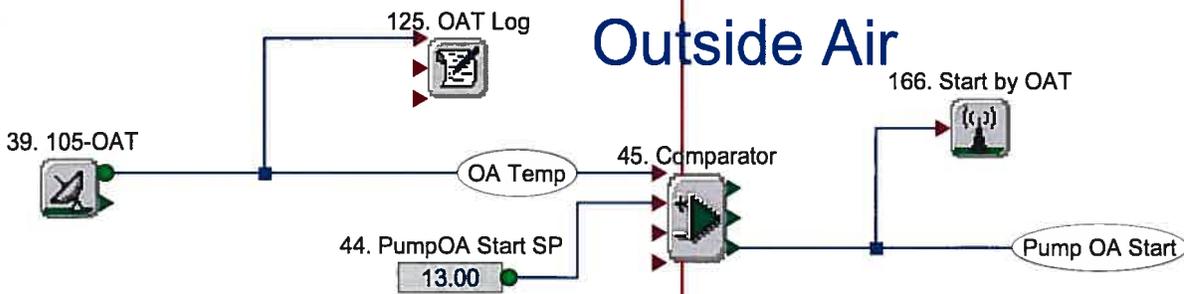
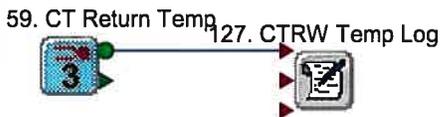
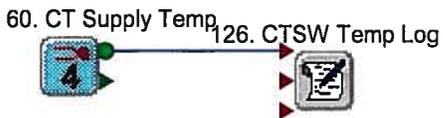
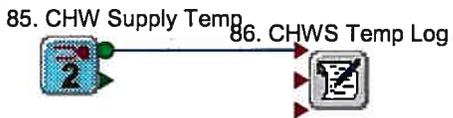
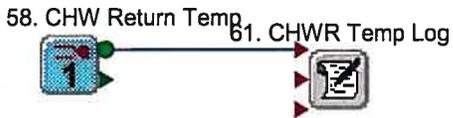
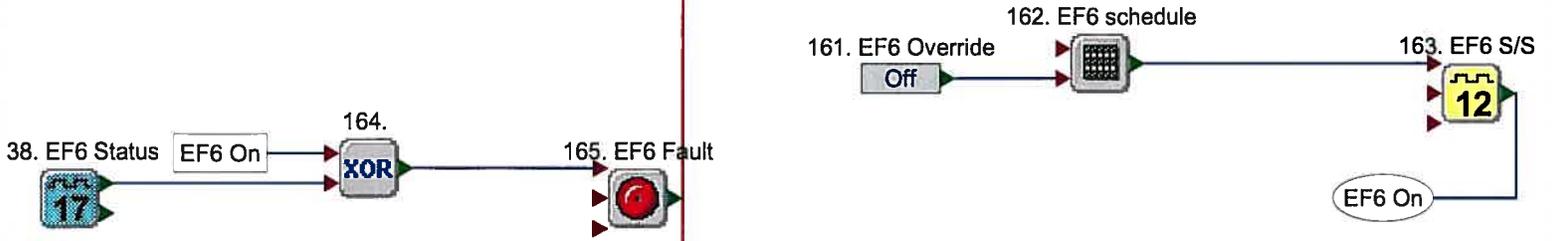


Pumps 7/8 Hot Water Reheat Temperature Control

The three way HW Valve will modulate to maintain the HW supply temperature at setpoint. This setpoint is determined from the outside air temperature

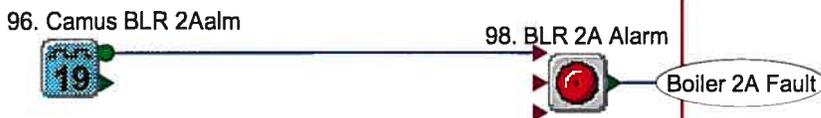


Exhaust Fan 6



Outside Air

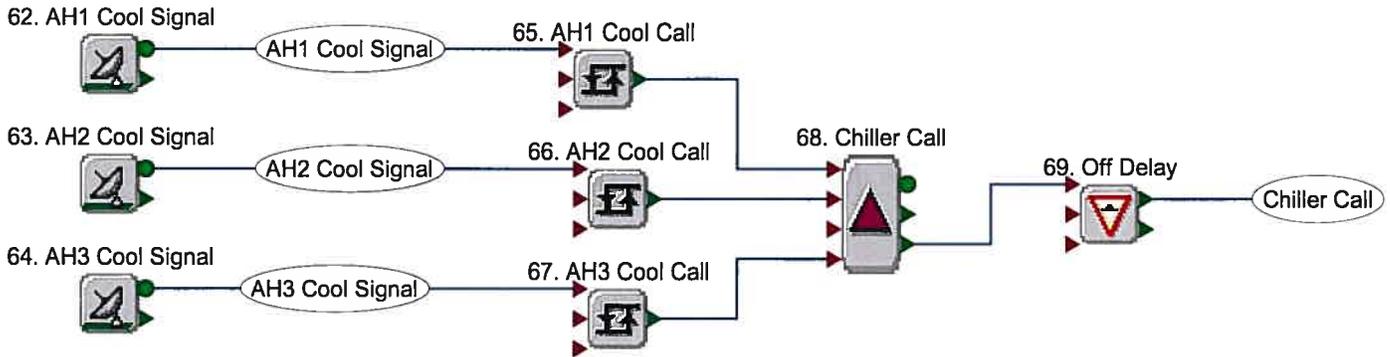
Camus Boiler Alarms



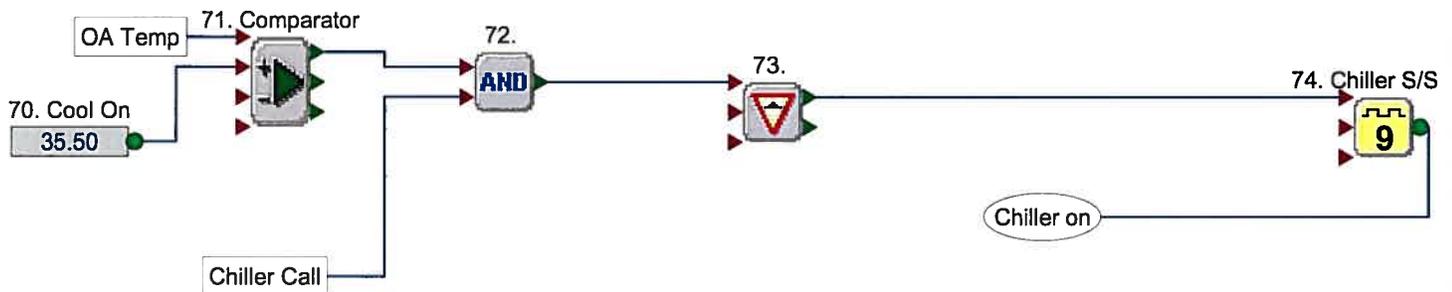
Cooling Control

Cooling Calls

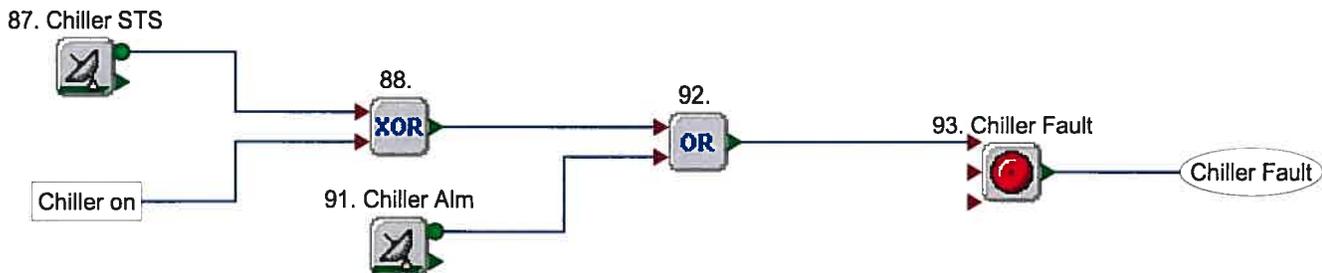
If any cool signal rises above a set value the lead pumps will turn on. After the lead pumps accumulated runtime exceeds the Change Time, the standby pump will become the lead pump.



If OAT greater than "cool on" user variable and AH 1-3 call for cooling chiller is enabled



Located in Pnl 106/2



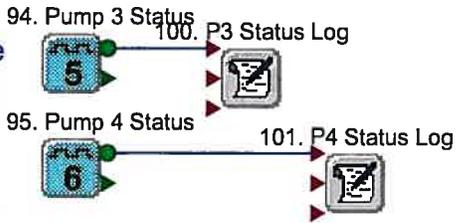
Located in Pnl 106/2



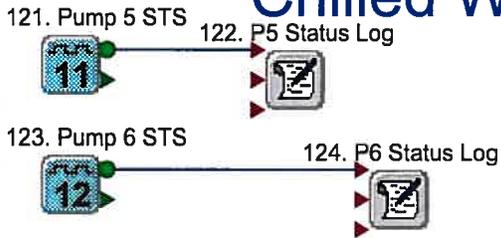
Out to control OP in 106 AO-2

Page 8

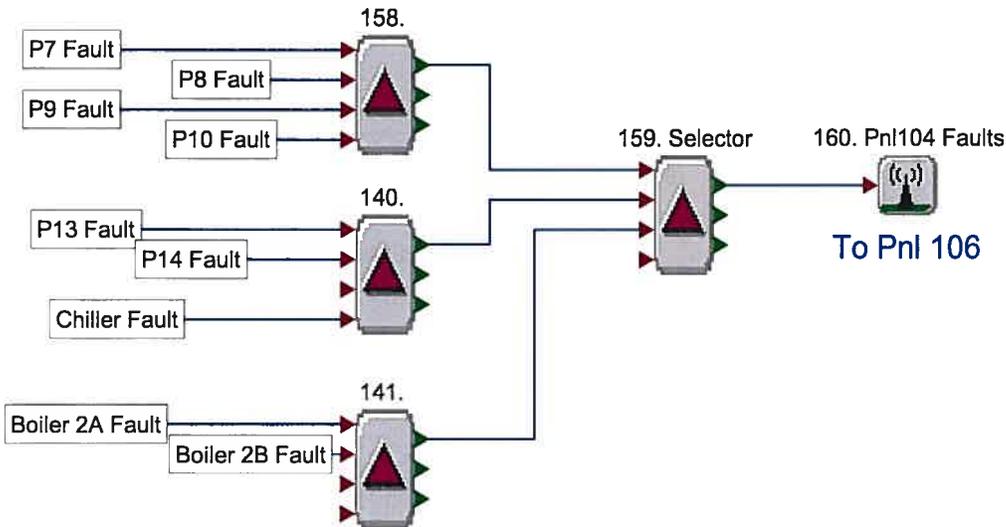
Condenser Pumps 3/4 Status



Chilled Water Pumps 5/6 Status

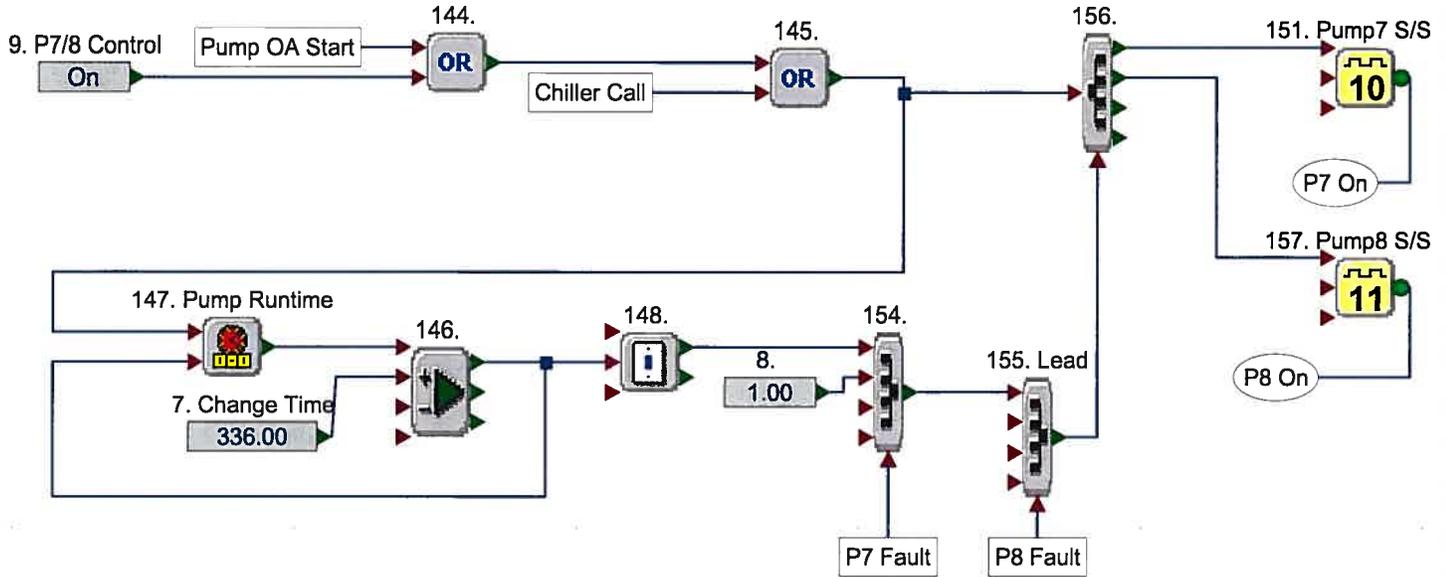


Alarm Collection

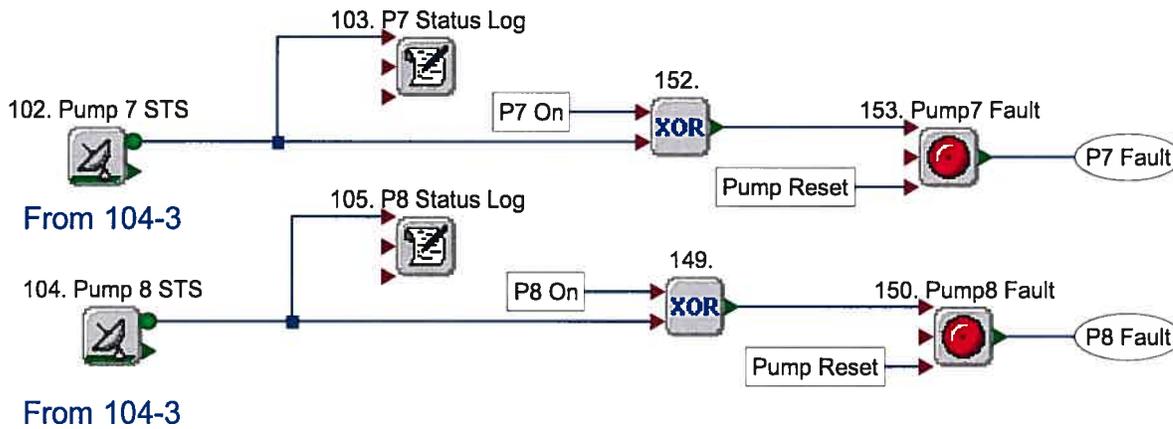


Hot Water Reheat Pump 7/8 Control

If either AH1 or AH3 HW pumps are on or there is a chiller call, the lead pump will turn on. After the lead pump accumulated runtime exceeds the Change Time, the standby pump will become the lead pump.

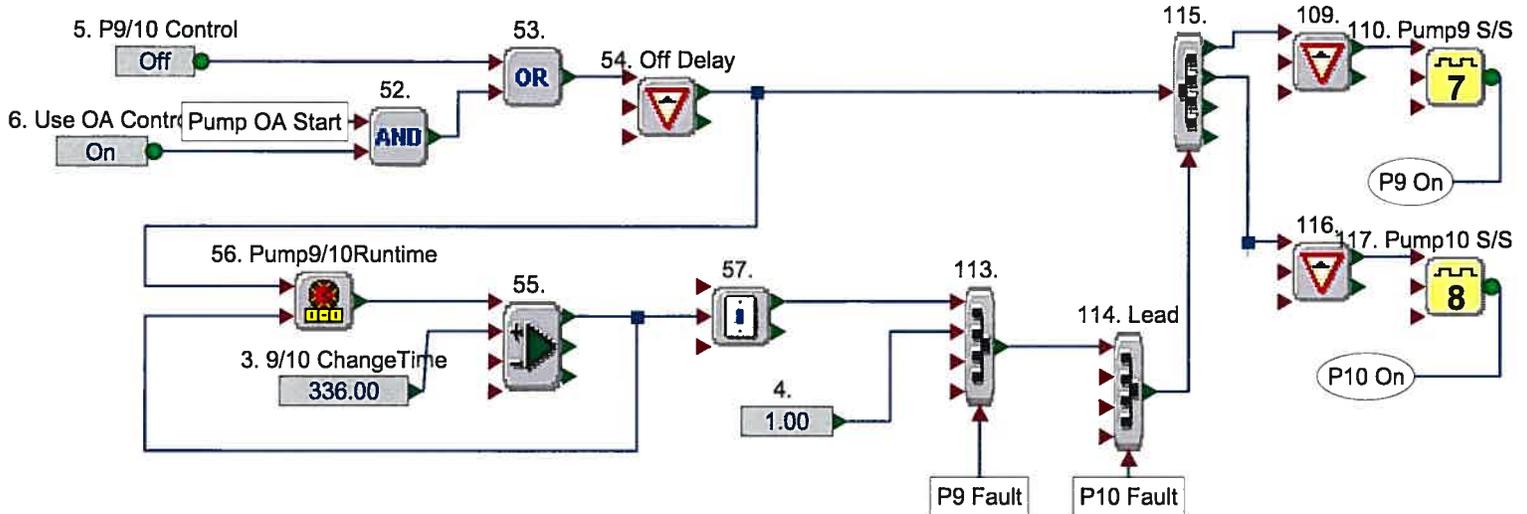


If the lead pump is on and its status has been off for more 60 seconds, the pump will indicate a fault and the standby pump will become lead. It will remain off until the user turns the Reset Pumps on.

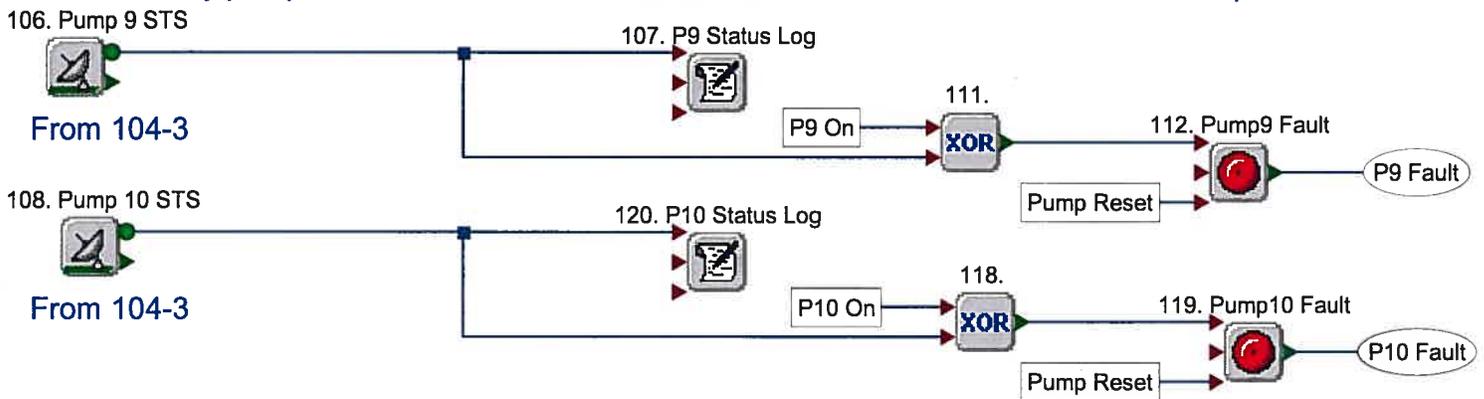


Hot Water Radiation Pump 9/10 Control

If outside temp is less than OA setpoint the lead pump will turn on. After the lead pumps accumulated runtime exceeds the Change Time, the standby pump will become the lead pump.



If the lead pump is on and its status has been off for more 60 seconds, the pump will indicate a fault and the standby pump will become lead. It will remain off until the user turns the Reset Pumps on.



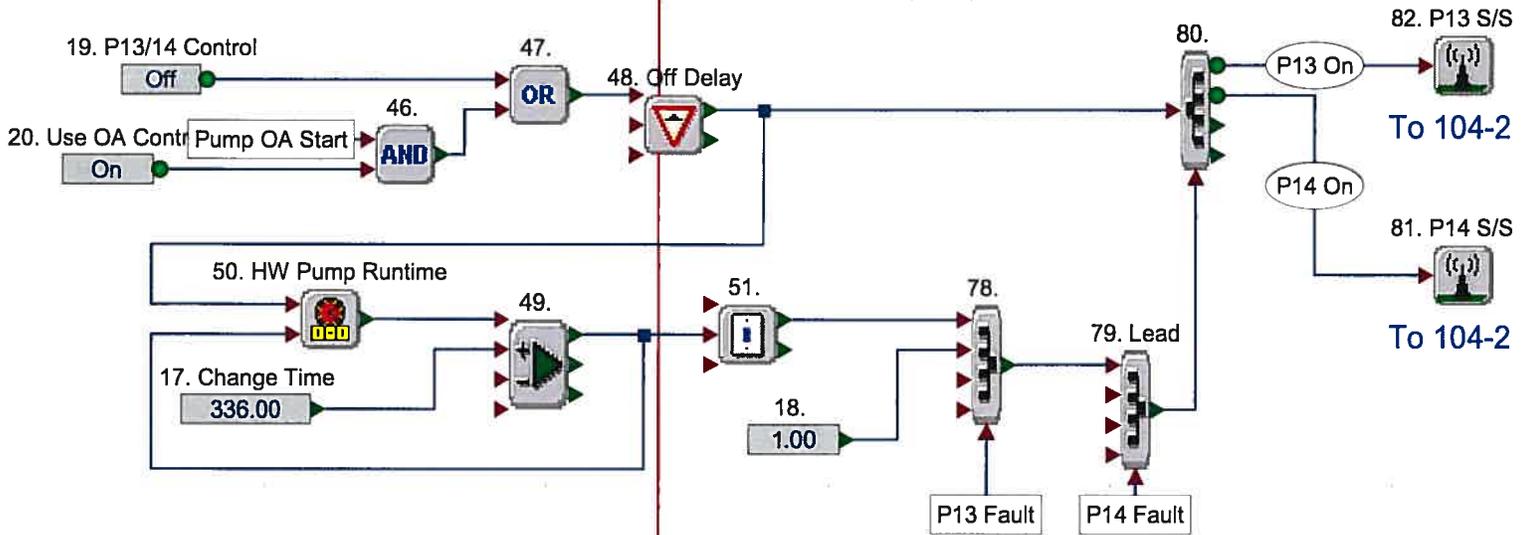
Pumps 11/12 Global Points

These points transferred here from 104-1 for watch page convenience

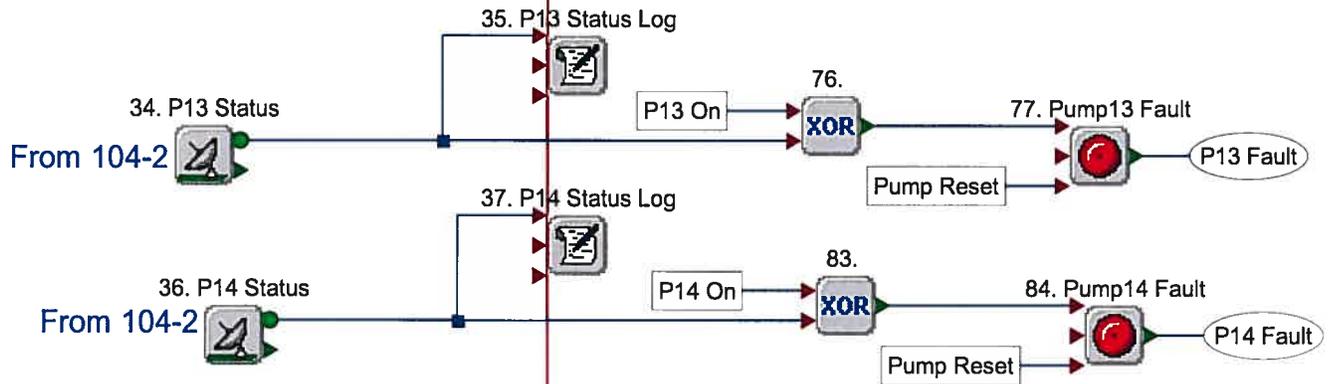


Hot Water Radiation 13/14 Pump Control

If outside temp is less than OA setpoint the lead pump will turn on. After the lead pumps accumulated runtime exceeds the Change Time, the standby pump will become the lead pump.



If the lead pump is on and its status has been off for more 60 seconds, the pump will indicate a fault and the standby pump will become lead. It will remain off until the user turns the Reset Pumps on.



128. 13/14SWT 130. 13/14VLV

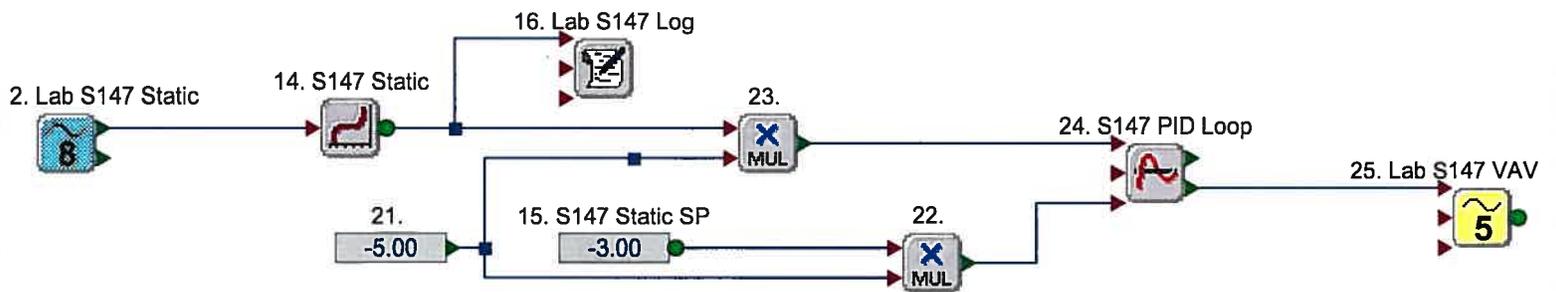
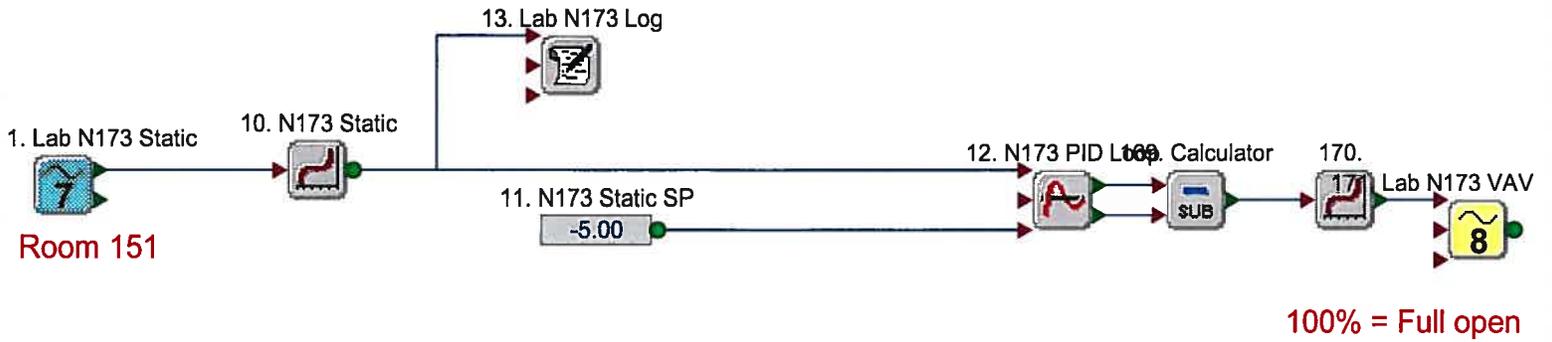


129. 13/14RWT 131. 13/14SP

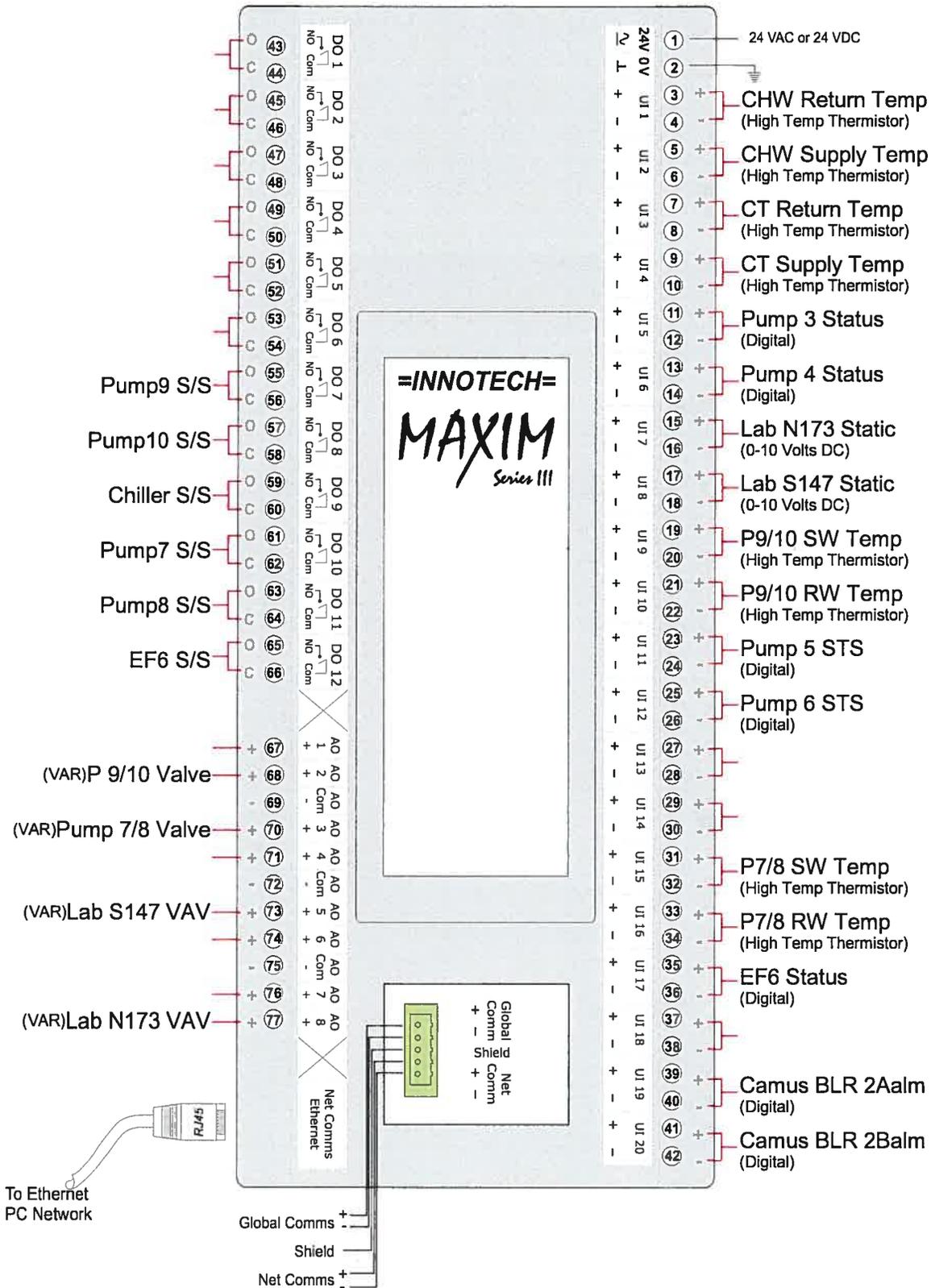


These points transferred here from 102-1 for watch page convenience

LAB VAV N173, S142, S147



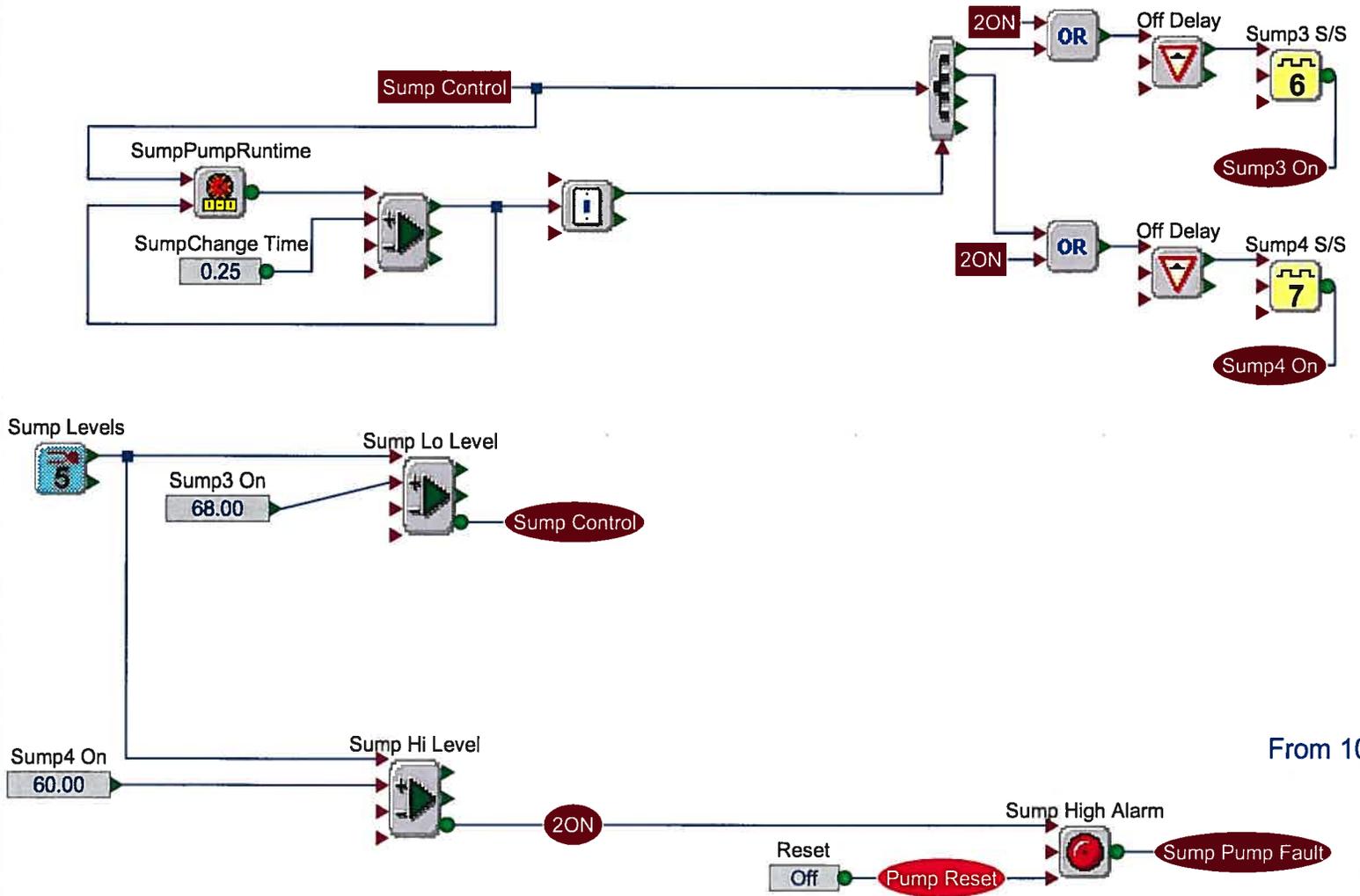
Innotech MAXIM Series III Controller (v6.20)



1. **Block Name:** Lab N173 Static
Block Type: Universal Input
Terminal: 7
Type: Volts
Forced: NO
Alpha: 50 %
Offset: 0.00
Minimum: 0.00
Maximum: 10.00
2. **Block Name:** Lab S147 Static
Block Type: Universal Input
Terminal: 8
Type: Volts
Forced: NO
Alpha: 3 %
Offset: -0.30
Minimum: 0.00
Maximum: 10.00
3. **Block Name:** 9/10 ChangeTime
Block Type: User Variable
Type: Analogue
Value: 336.00
Minimum: 0.00
Maximum: 4000.00
4. **Block Name:**
Block Type: User Variable
Type: Analogue
Value: 1.00
Minimum: 0.00
Maximum: 100.00
5. **Block Name:** P9/10 Control
Block Type: User Variable
Type: Digital
Value: OFF
6. **Block Name:** Use OA Control
Block Type: User Variable
Type: Digital
Value: ON
7. **Block Name:** Change Time
Block Type: User Variable
Type: Analogue
Value: 336.00
Minimum: 0.00
Maximum: 2000.00
8. **Block Name:**
Block Type: User Variable
Type: Analogue
Value: 1.00
Minimum: 0.00
Maximum: 100.00
9. **Block Name:** P7/8 Control
Block Type: User Variable
Type: Digital
Value: ON
10. **Block Name:** N173 Static
Block Type: Universal Curve
Nr. Points 2
Data: FunctX[1]: 0.00 FunctY[1]: -30.00
Data: FunctX[2]: 10.00 FunctY[2]: 30.00

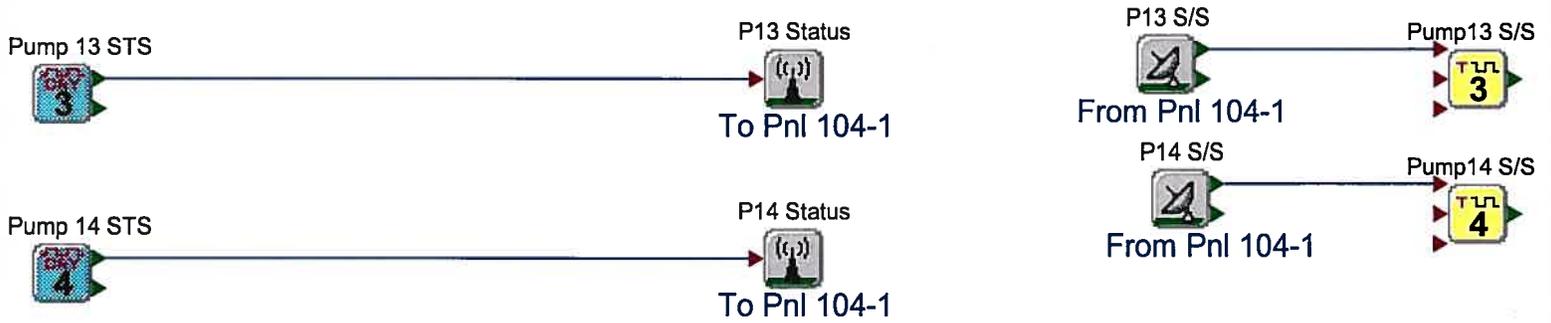
104 Ctrl 2

Sump Pump Control

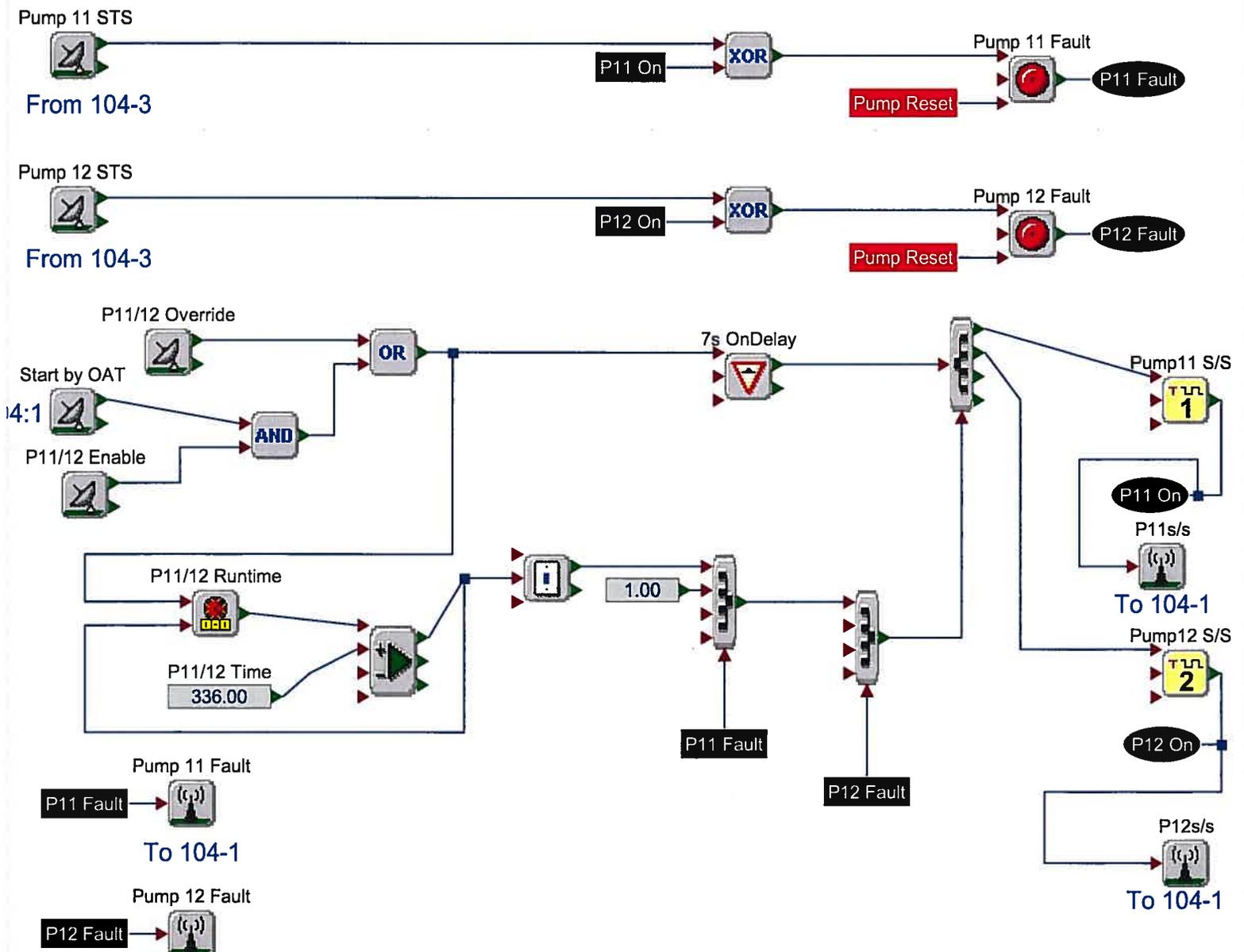


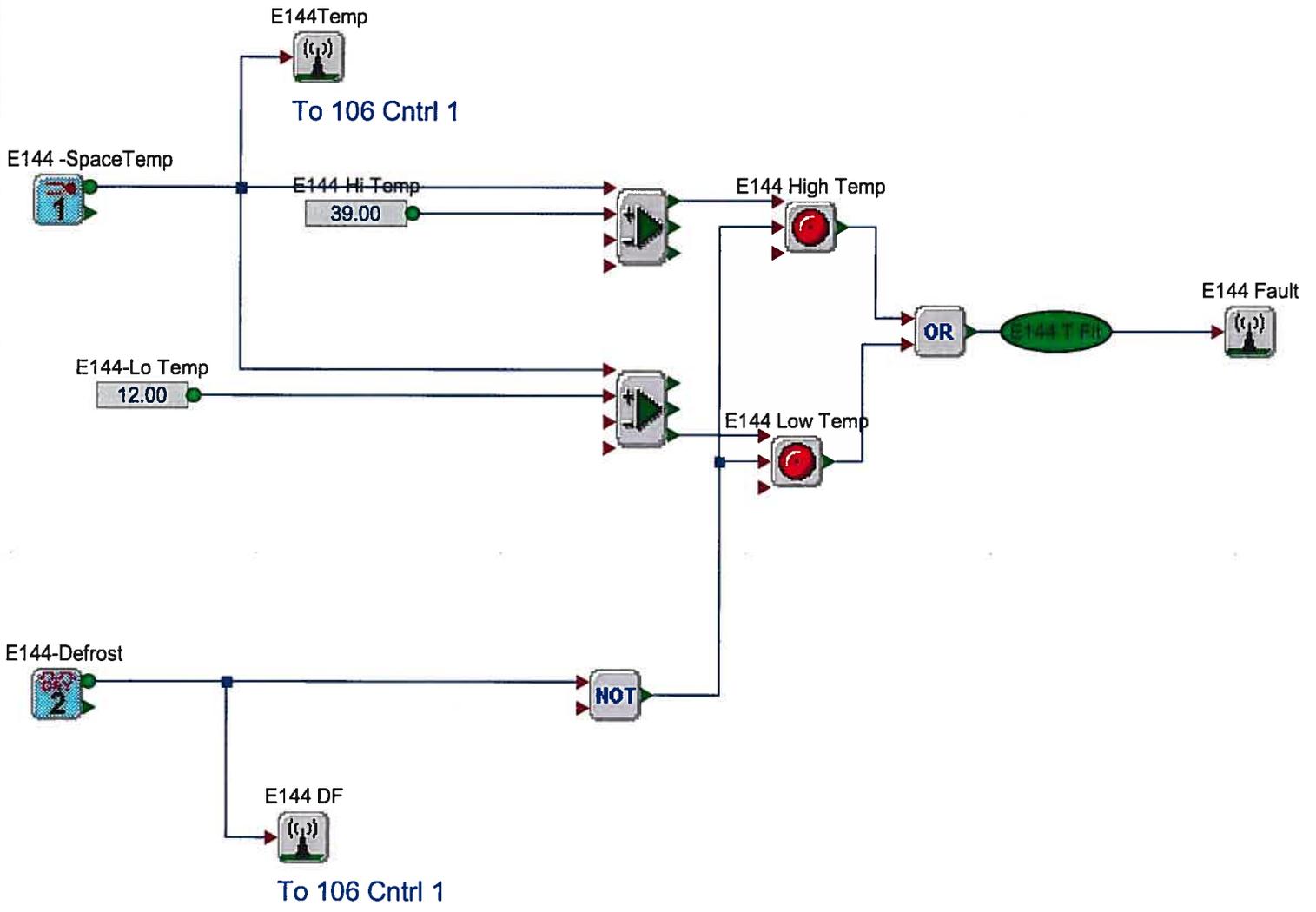
From 10

HW Radiation Pump 13/14 Control

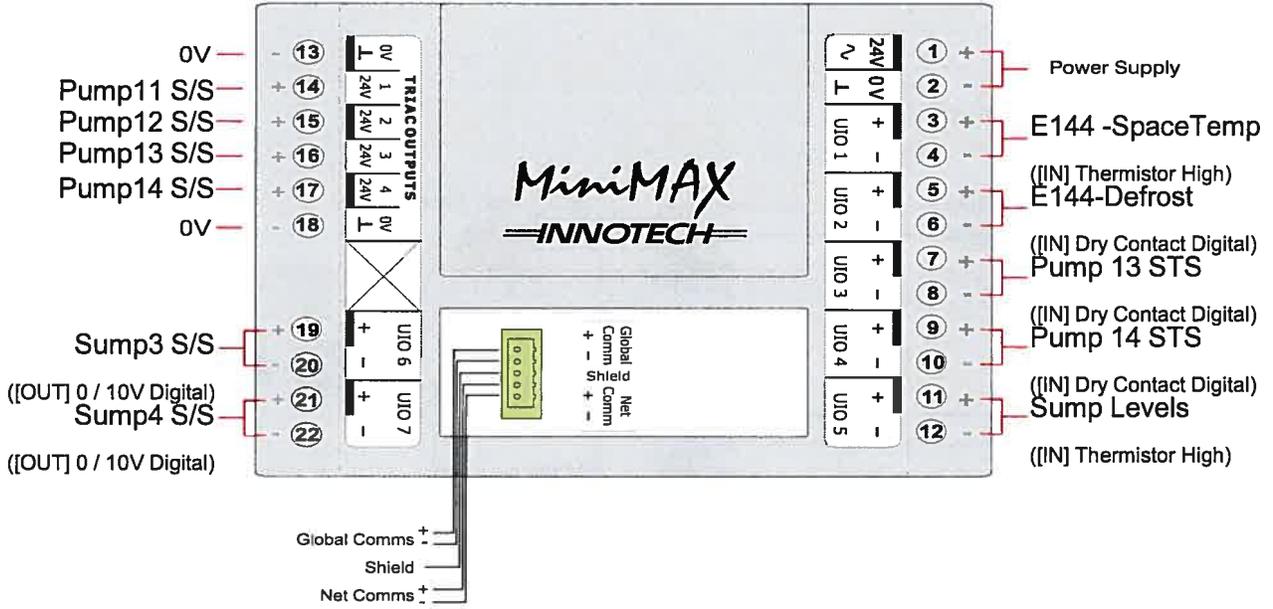


HW Radiation Pump 11/12 Control





Innotech MINIMAX (MM01) Controller (v6.30)



MAXIM Function Pages

Details for MAXIM Function Page 1: "E144"

WATCH NAME	WATCH DETAILS	BLOCK DETAILS
E144 -Space, Temp	Type: Value	Name: E144 -SpaceTemp Seq no: 1 Output name: OUTPUT
E144- Defrost, Mode	Type: Digital	Name: E144-Defrost Seq no: 2 Output name: OUTPUT
* E144-Low Temp, Setpoint	Type: Value	Name: E144-Lo Temp Seq no: 38 Output name: OUTPUT
* E144-Hi Temp, Setpoint	Type: Value	Name: E144-Hi Temp Seq no: 36 Output name: OUTPUT

Details for MAXIM Function Page 2: "Sump Pumps 3&4"

WATCH NAME	WATCH DETAILS	BLOCK DETAILS
Sump4, Enable	Type: Digital	Name: Sump4 S/S Seq no: 31 Output name: OUTPUT
Sump3, Enable	Type: Digital	Name: Sump3 S/S Seq no: 29 Output name: OUTPUT
Sump Hi Level, Float	Type: Digital	Name: Sump Hi Level Seq no: 9 Output name: <
Sump Lo Level, Float	Type: Digital	Name: Sump Lo Level Seq no: 7 Output name: <

Details for MAXIM Function Page 3: "Sump Alarm"

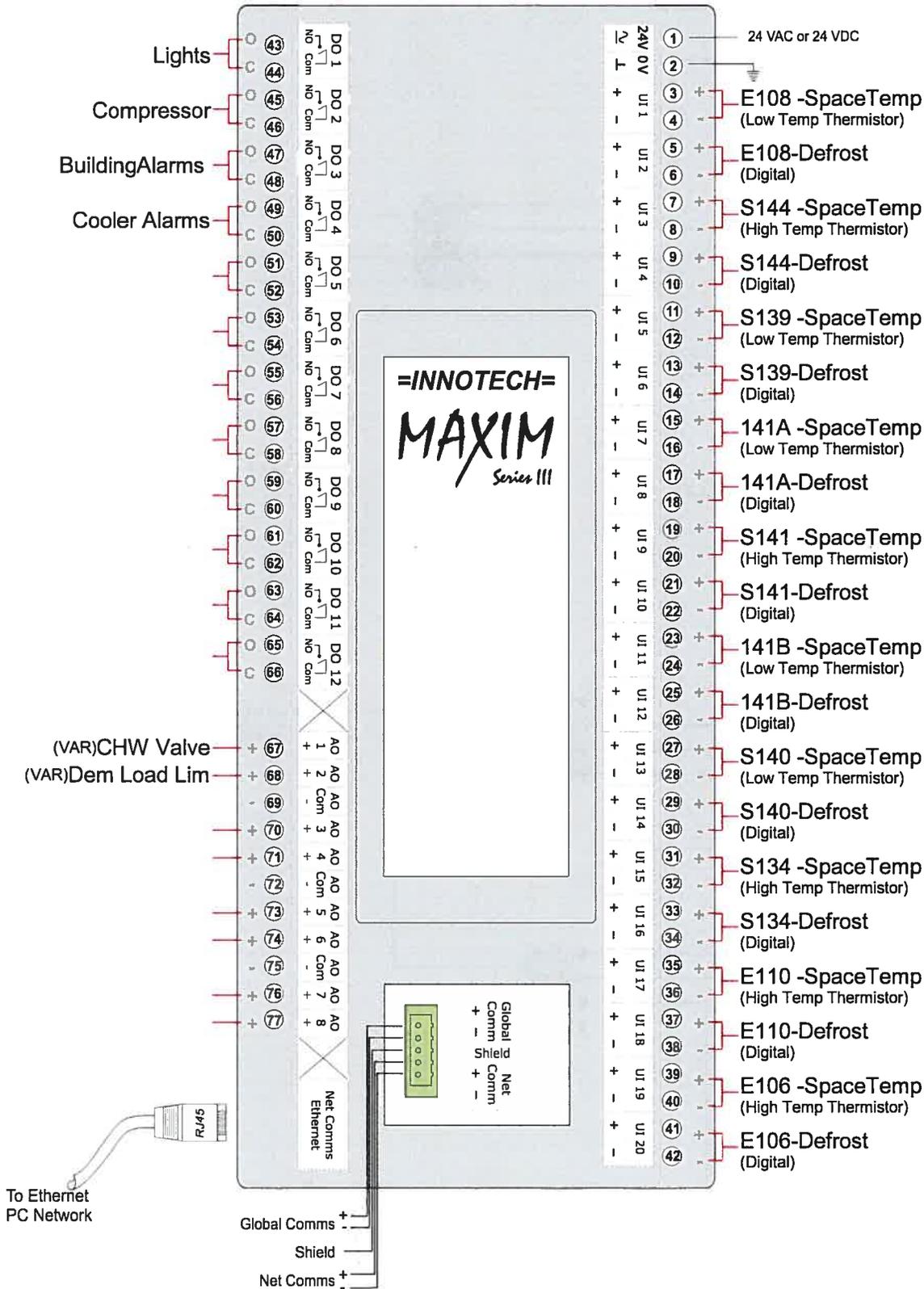
WATCH NAME	WATCH DETAILS	BLOCK DETAILS
Sump High, Alarm	Type: Digital	Name: Sump High Alarm Seq no: 11 Output name: OUTPUT
* Sump 3&4 Alarm, Reset	Type: Digital	Name: Reset Seq no: 10 Output name: OUTPUT
Sump Runtime, Accum.	Type: Value	Name: SumpPumpRuntime Seq no: 23 Output name: ACC.VALUE
* SumpChange, Time	Type: Value	Name: SumpChange Time Seq no: 5 Output name: OUTPUT

Details for MAXIM Function Page 4: ""
 No watches associated with this page

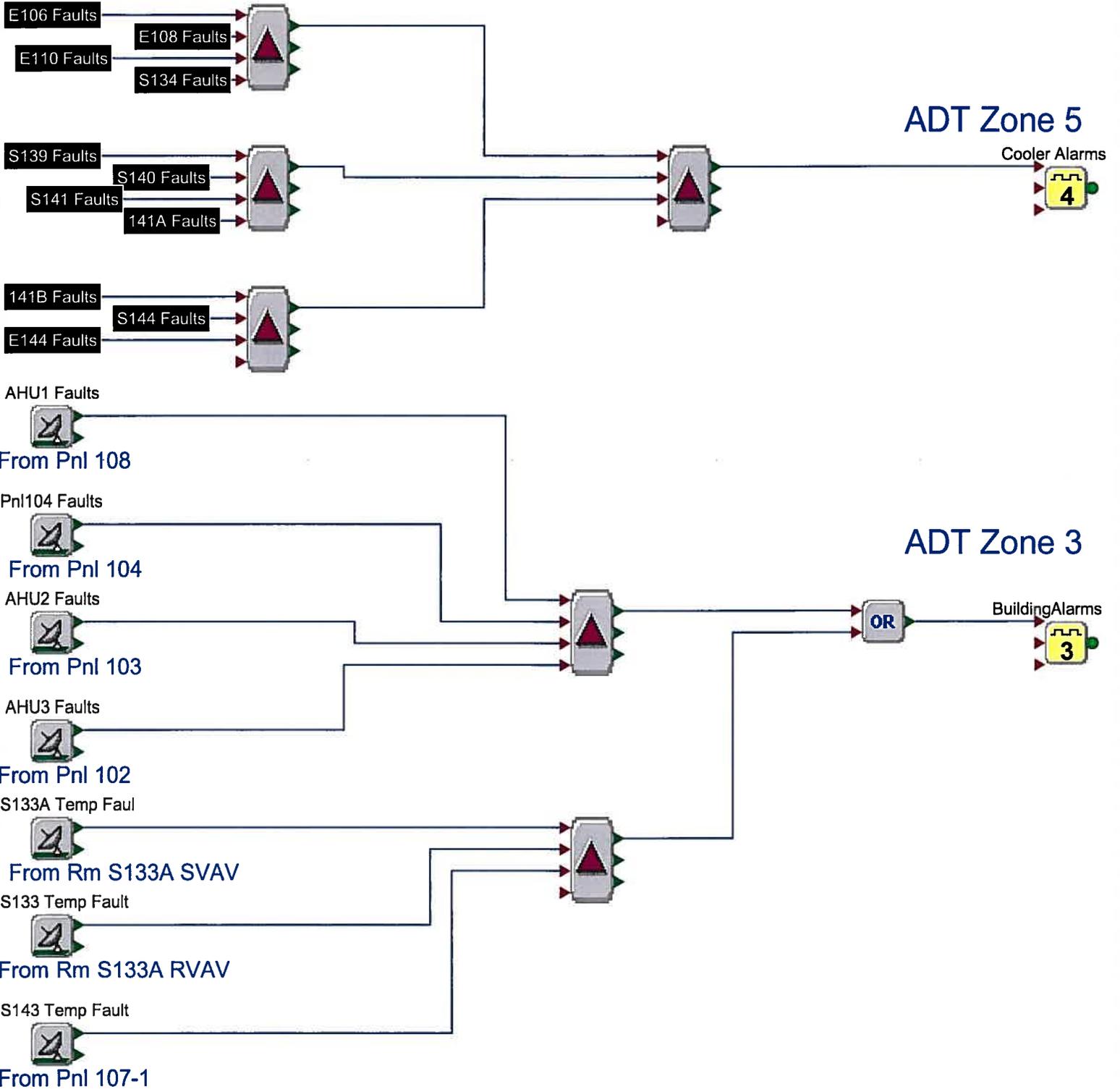
Details for MAXIM Function Page 5: ""
 No watches associated with this page

Details for MAXIM Function Page 6: "Flash Page"
 No watches associated with this page

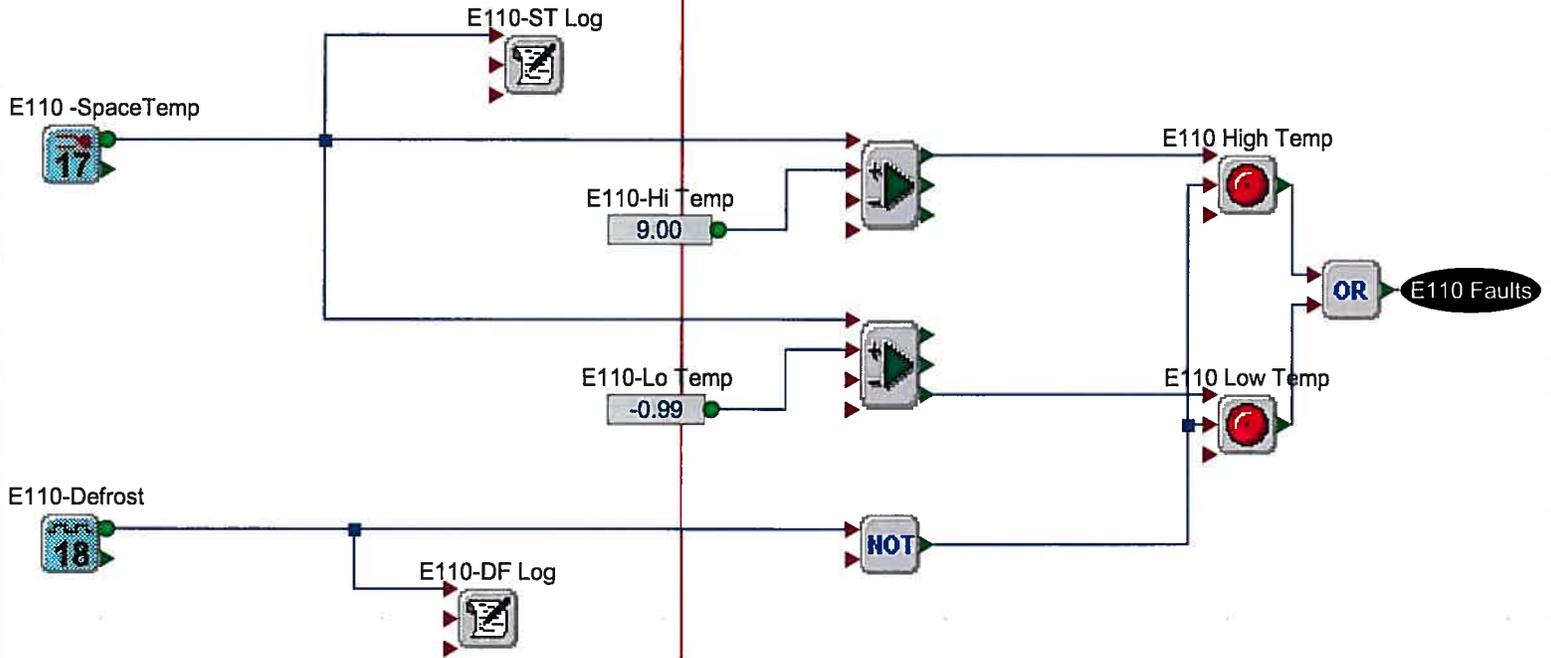
Innotech MAXIM Series III Controller (v6.20)



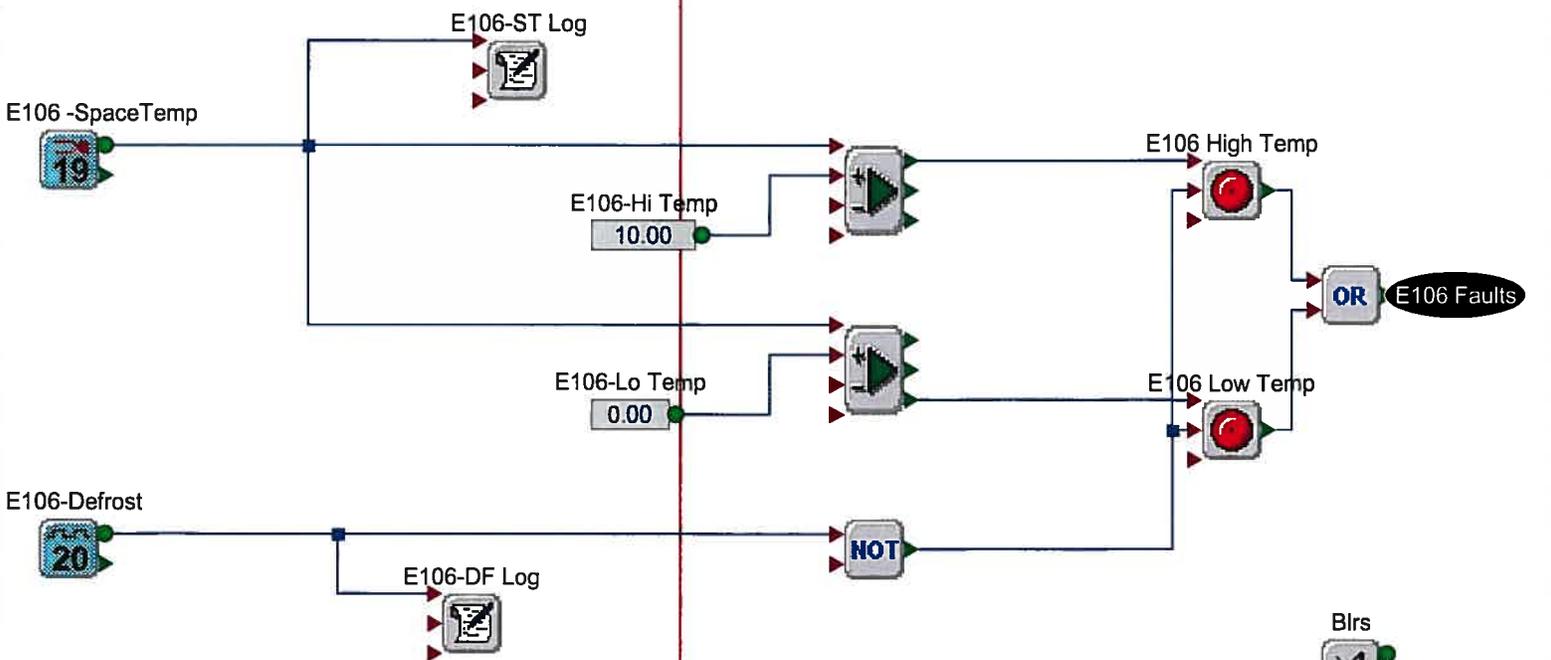
Alarm Collection



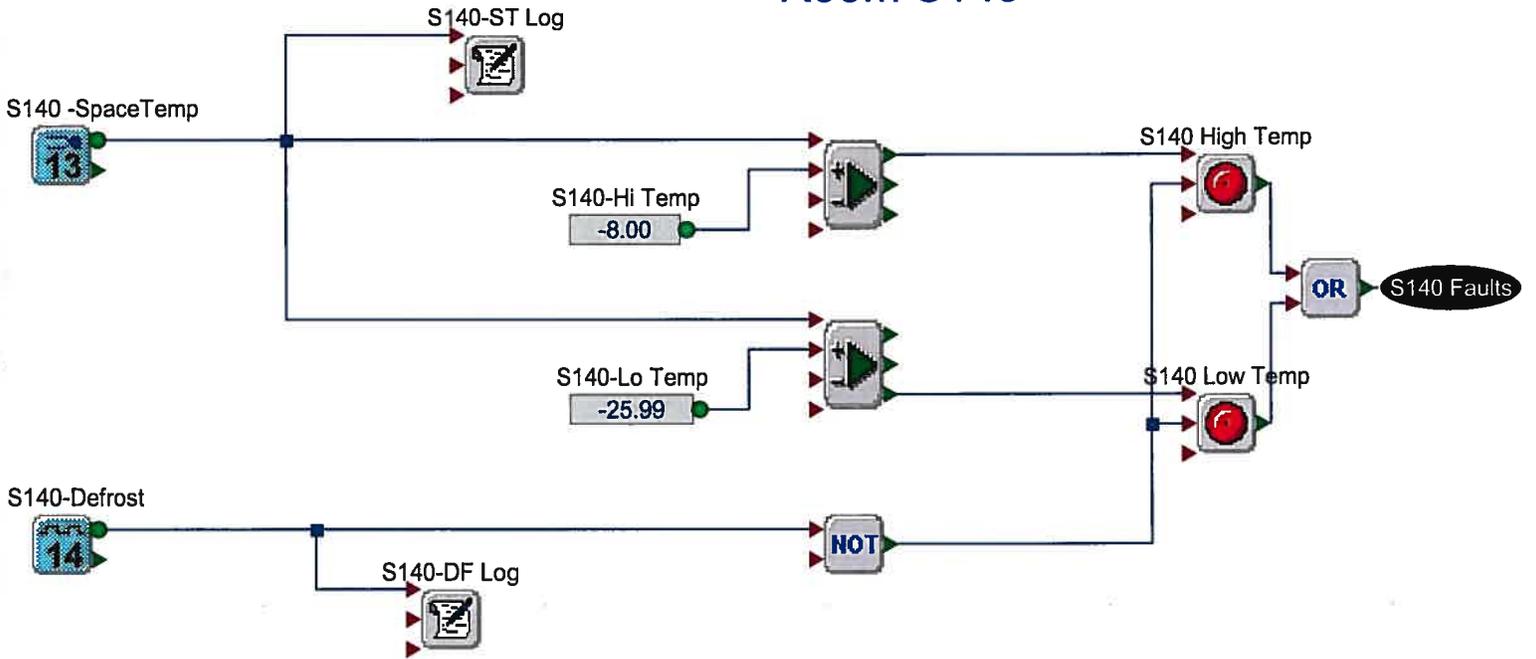
Room E110



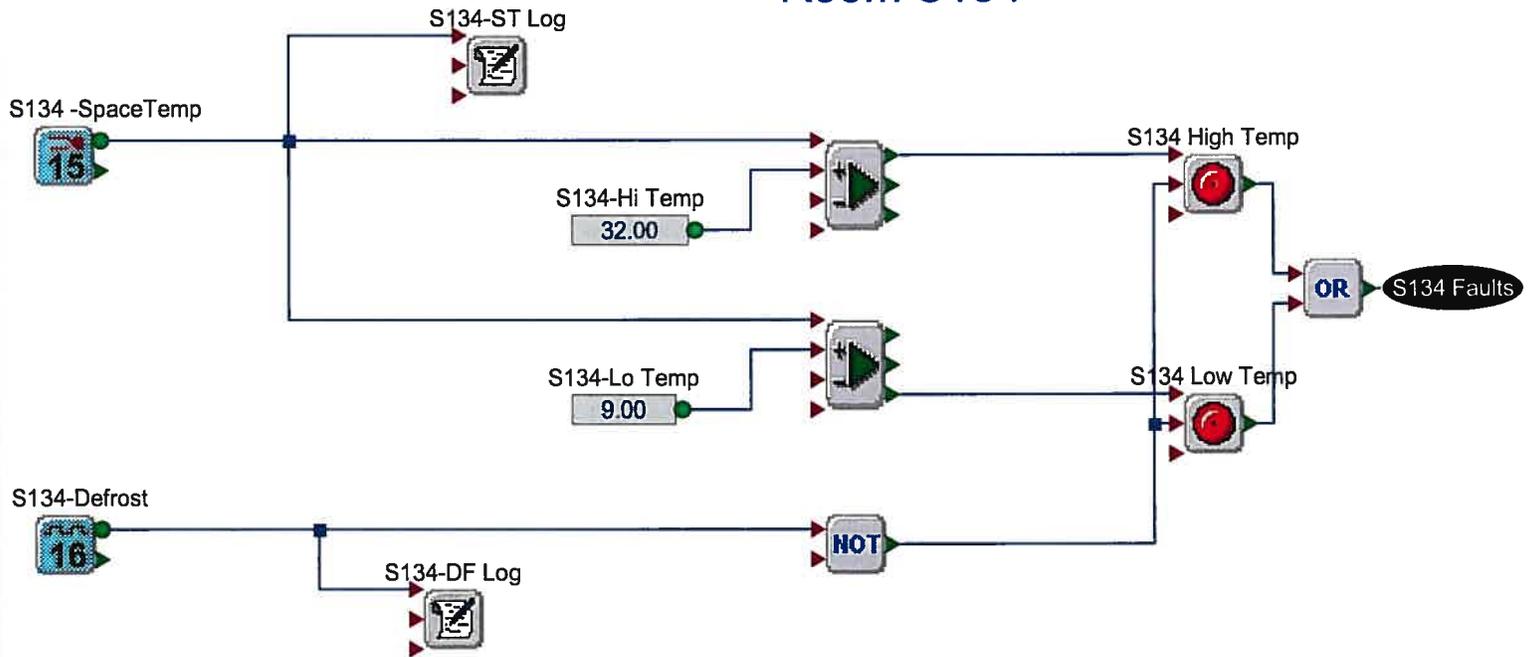
Room E106



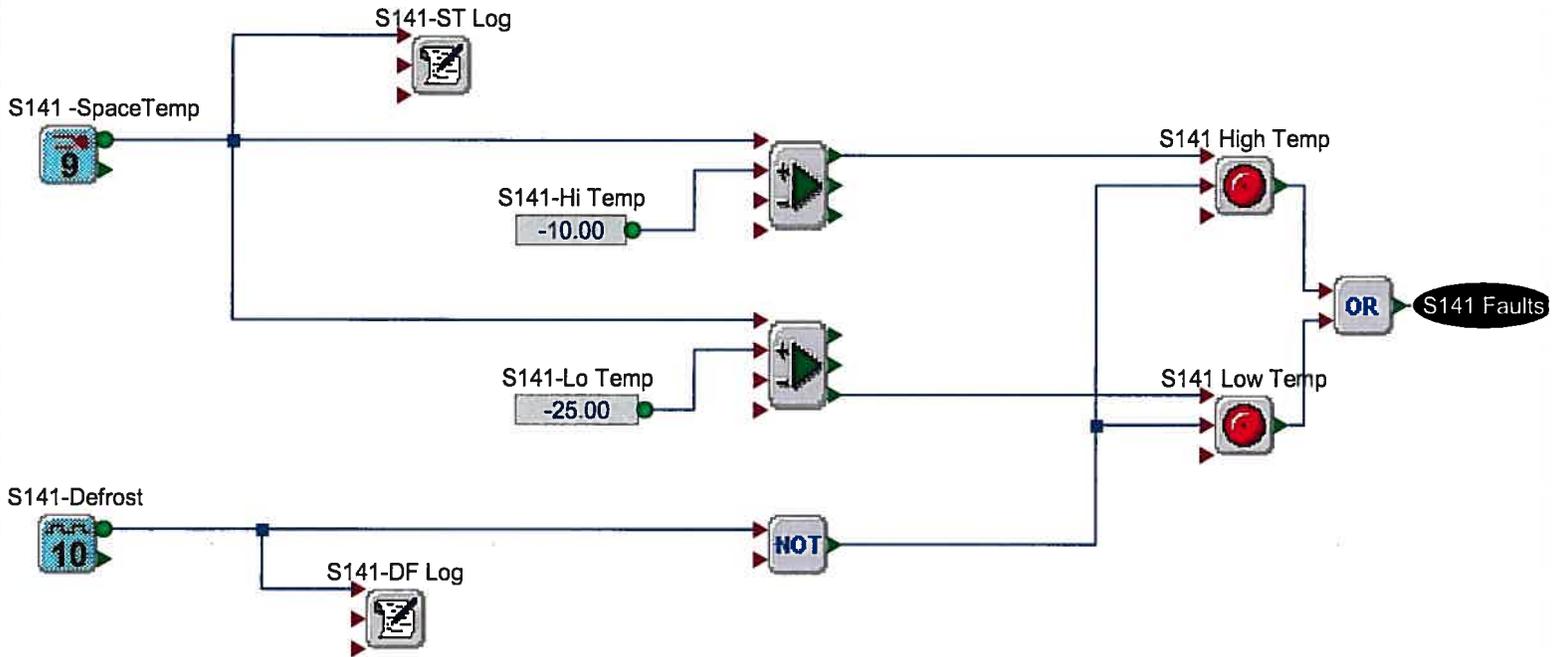
Room S140



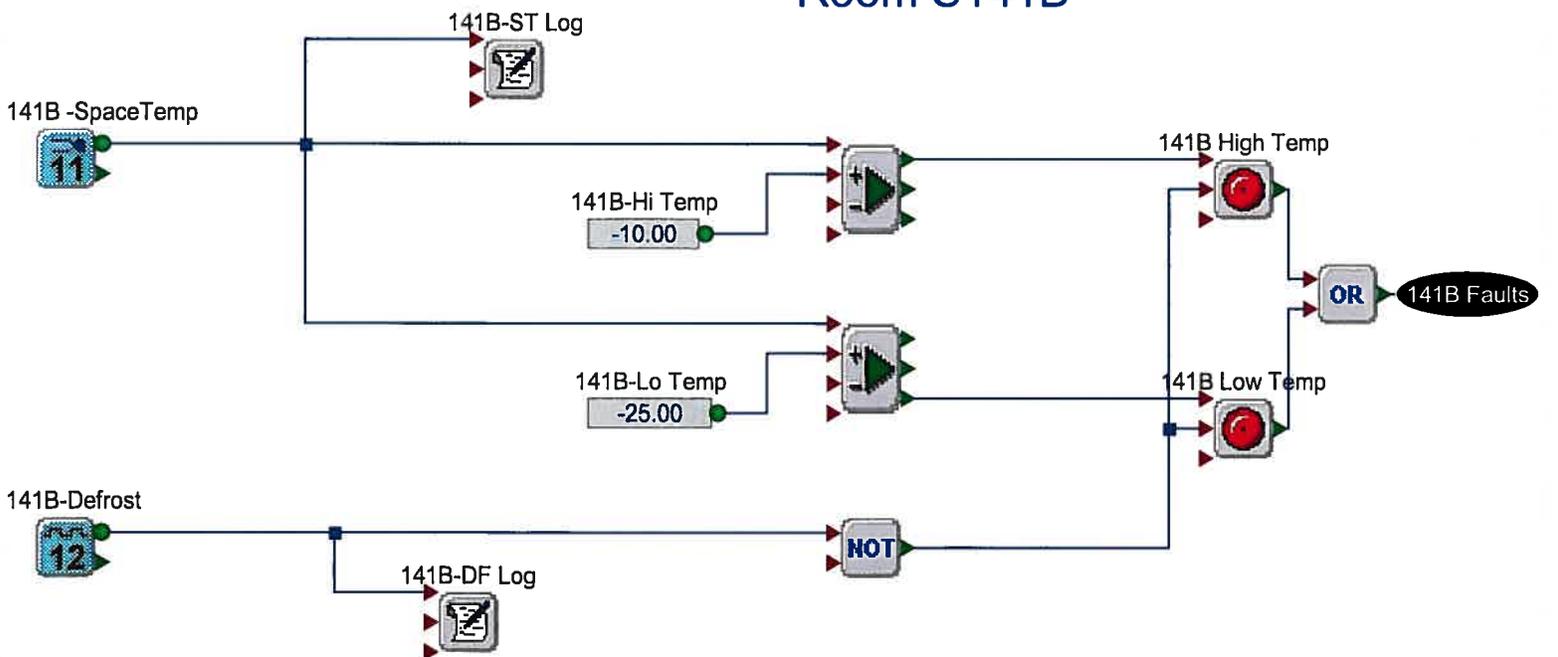
Room S134

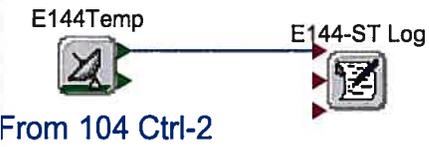
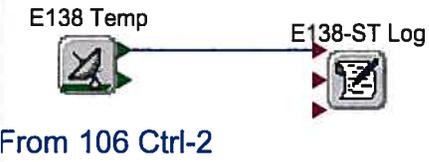
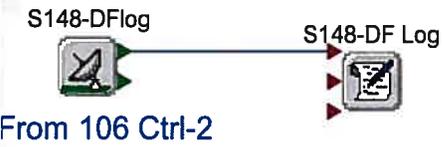
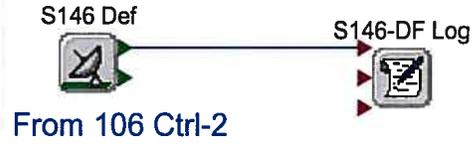


Room S141



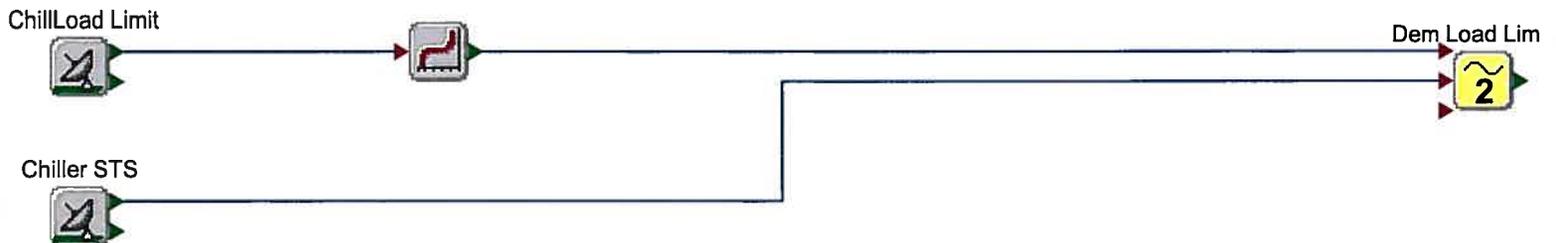
Room S141B



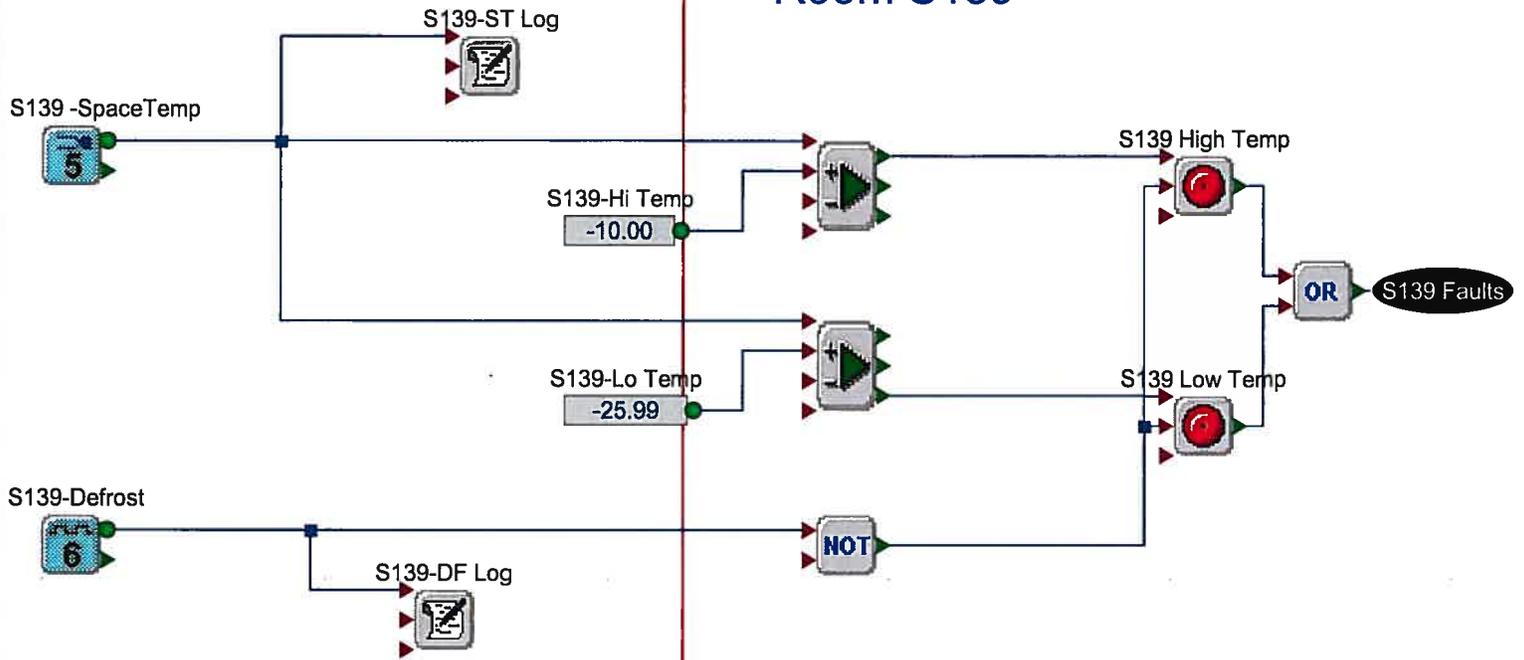


Chiller Load Limit

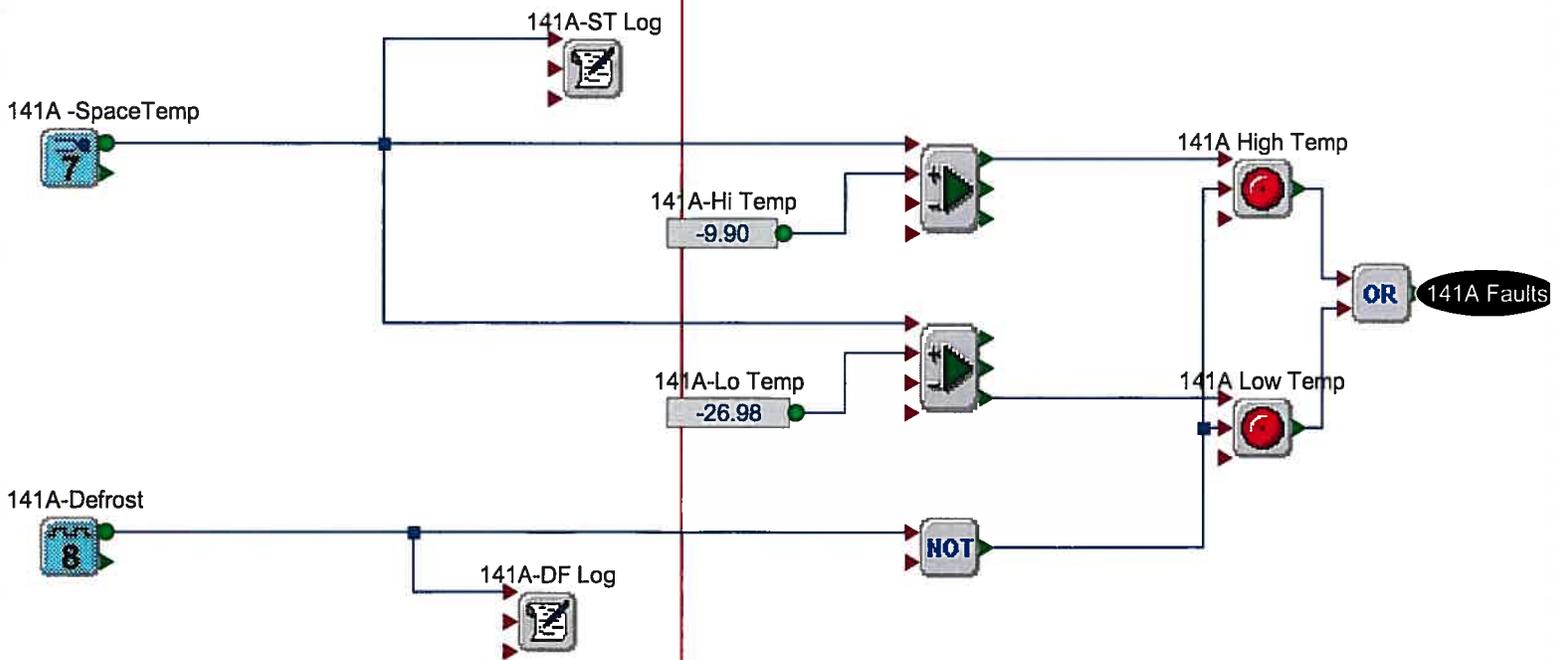
Controlled from CHILLER program in Pnl 104-1



Room S139



Room S141A



Room S144 Control

Day Mode:

Space temperature is maintained at 12 degrees C (user definable).

DO1 turns ON the lights for duration of day mode.

DO2 turns ON which enables the compressor for duration of day mode

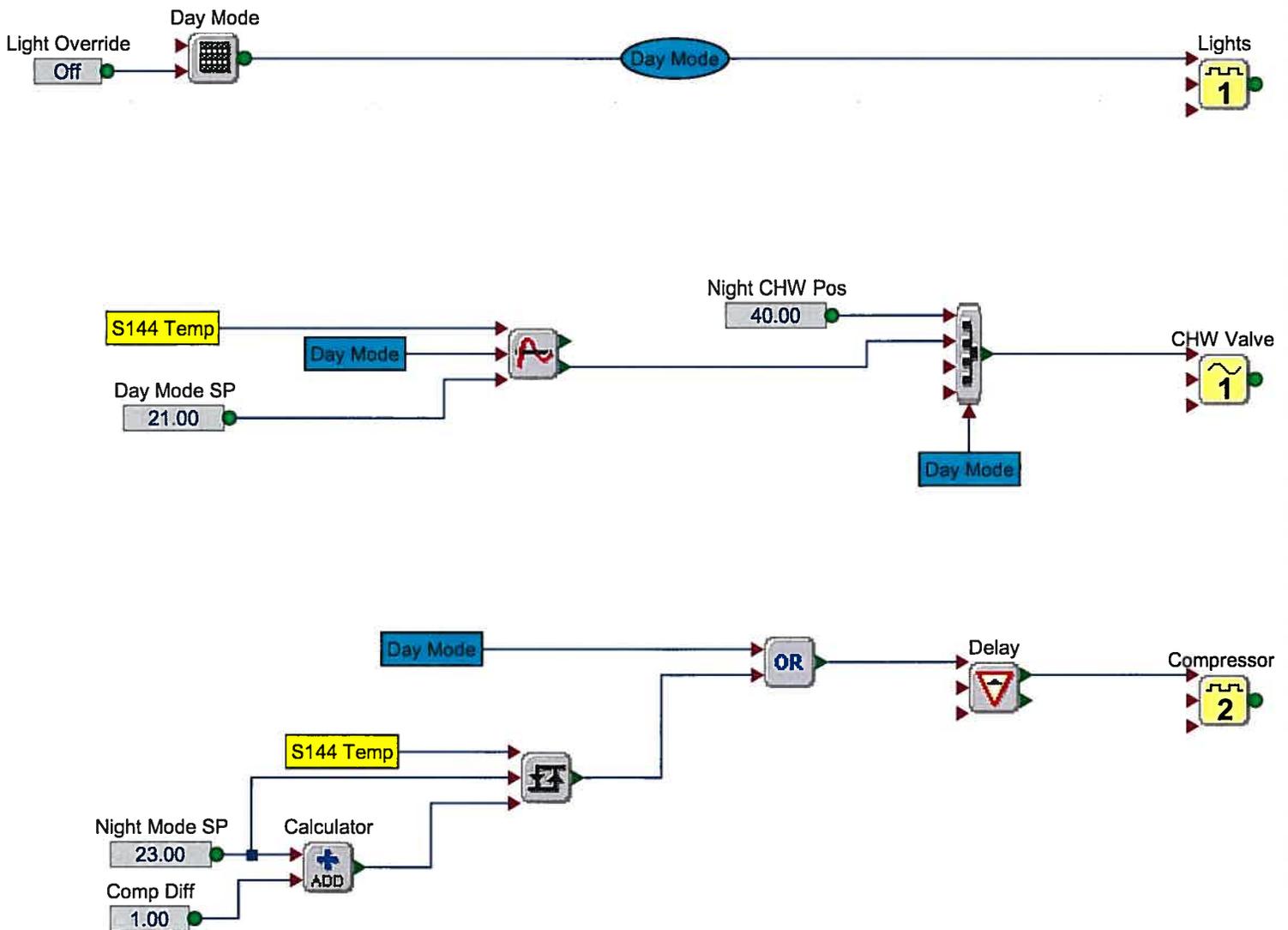
AO1 operates the 0-10V 3-way valve on the chilled water line to maintain space temperature setpoint.

Night Mode:

DO1 is turned OFF.

DO2 is turned ON when space temperature rises above the Night Setpoint of 8 C (user definable) plus the compressor differential setpoint of 1 C (user definable)

AO1 = 70% signal (user definable)

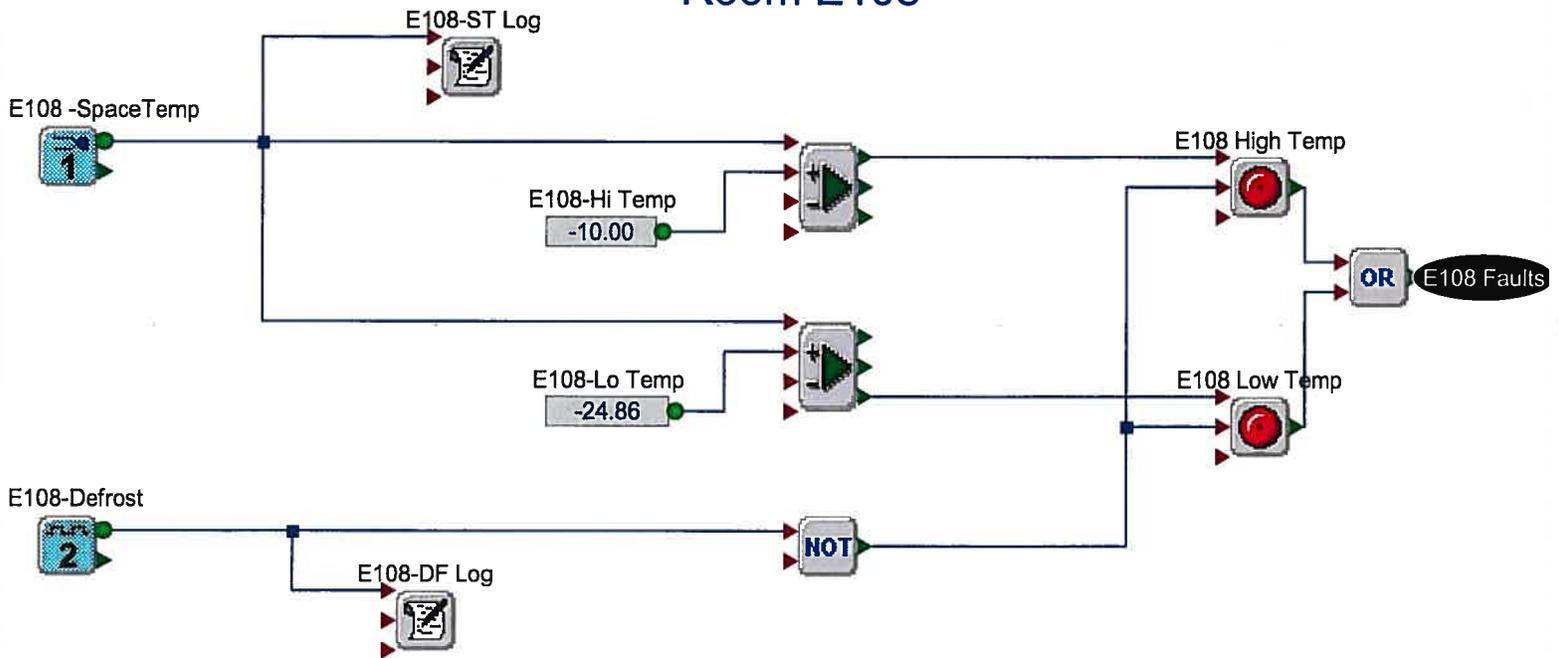


PANEL 106 CONTROL

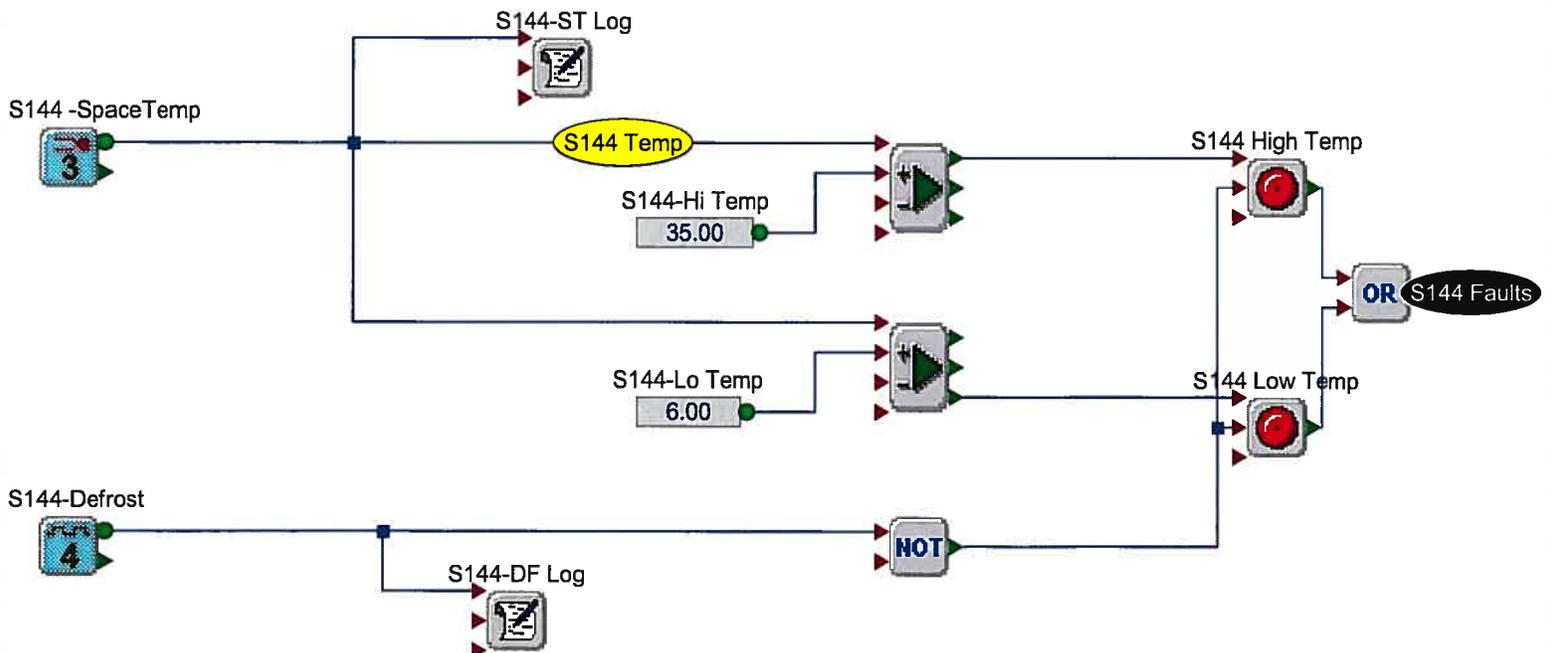
When the space temperature rises or falls below a user defined setpoint, an alarm is generated.

If the refrigeration unit in a particular room is in Defrost Mode, as determined from the digital status input, the alarm is ignored until the refrigeration unit leaves Defrost Mode and resumes normal operation.

Room E108



Room S144

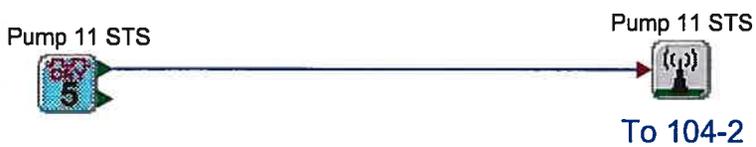


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
SUN																								
MON																								
TUE																								
WED																								
THU																								
FRI																								
SAT																								

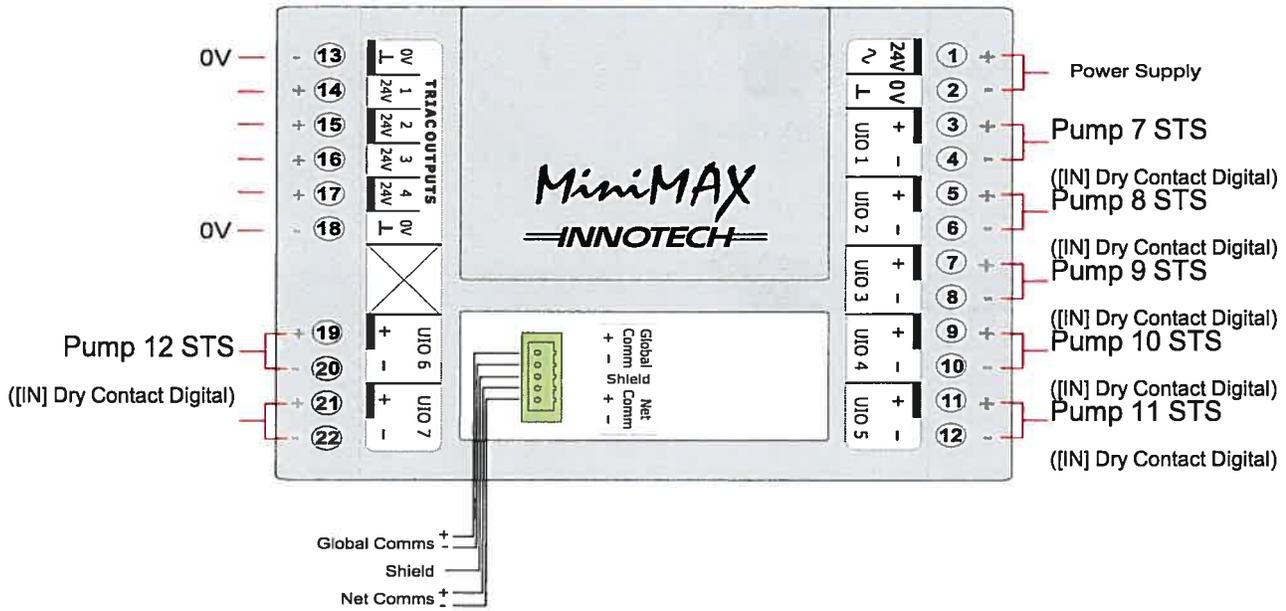
Block: Day Mode

- Schedule 1: Sunday 0:00 to Sunday 4:00
- Schedule 2: Sunday 12:00 to Sunday 24:00
- Schedule 3: Monday 0:00 to Monday 4:00
- Schedule 4: Monday 12:00 to Monday 24:00
- Schedule 5: Tuesday 0:00 to Tuesday 4:00
- Schedule 6: Tuesday 12:00 to Tuesday 24:00
- Schedule 7: Wednesday 0:00 to Wednesday 4:00
- Schedule 8: Wednesday 12:00 to Wednesday 24:00
- Schedule 9: Thursday 0:00 to Thursday 4:00
- Schedule 10: Thursday 12:00 to Thursday 24:00
- Schedule 11: Friday 0:00 to Friday 4:00
- Schedule 12: Friday 12:00 to Friday 24:00
- Schedule 13: Saturday 0:00 to Saturday 4:00
- Schedule 14: Saturday 12:00 to Saturday 24:00

104-Ctrl3



Innotech MINIMAX (MM01) Controller (v6.30)

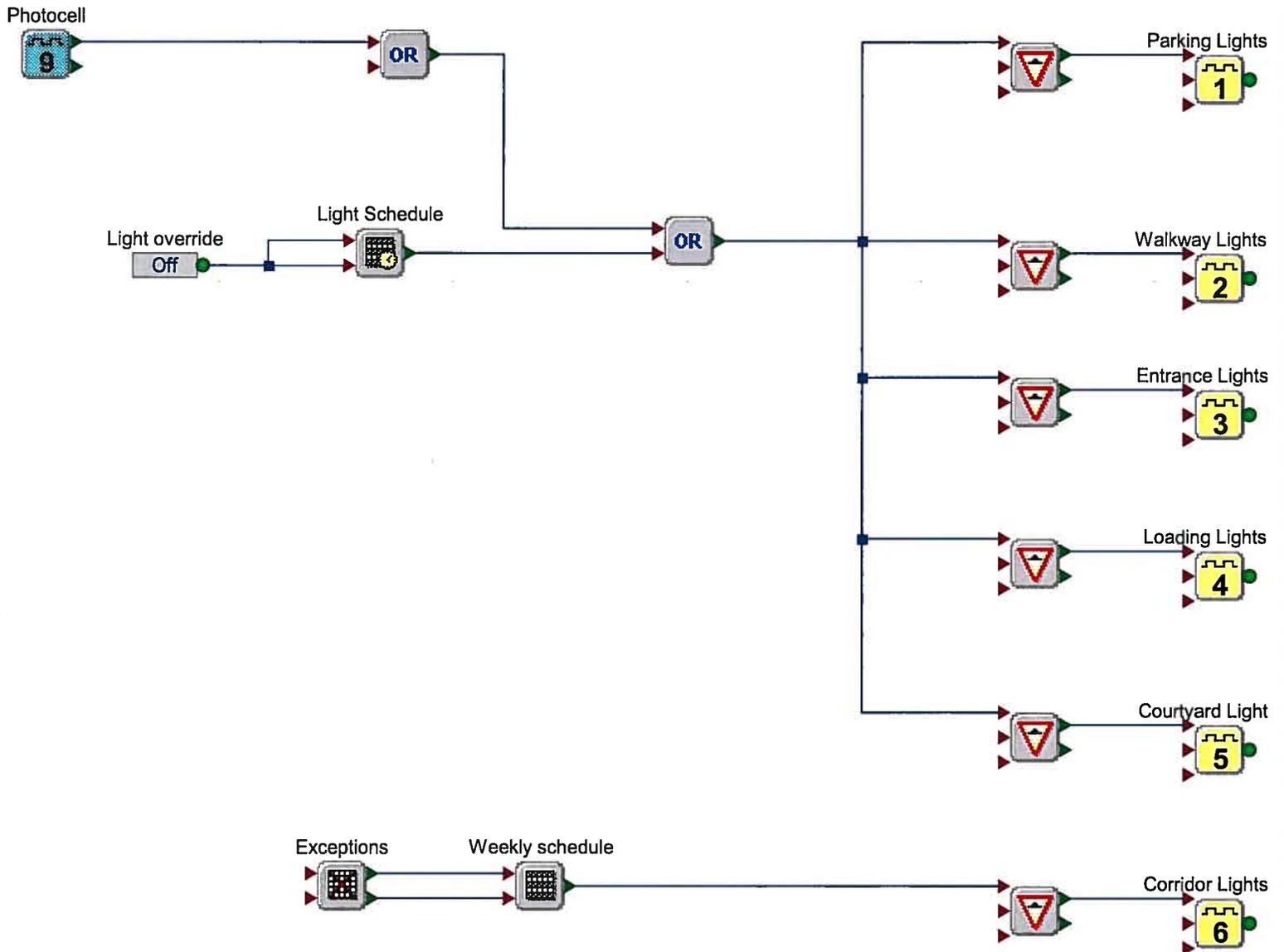


Panel 105

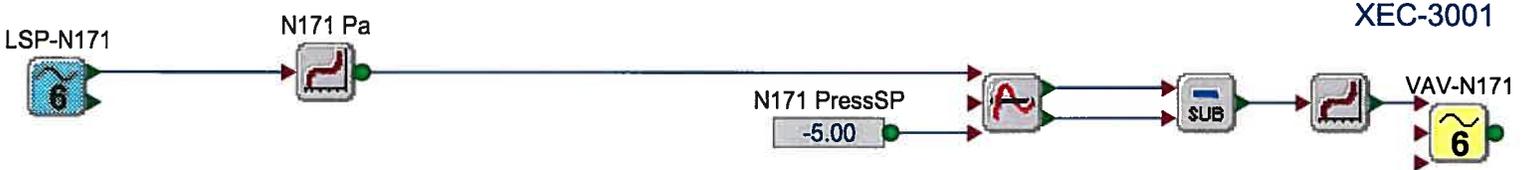
VAV Control



Lighting Control



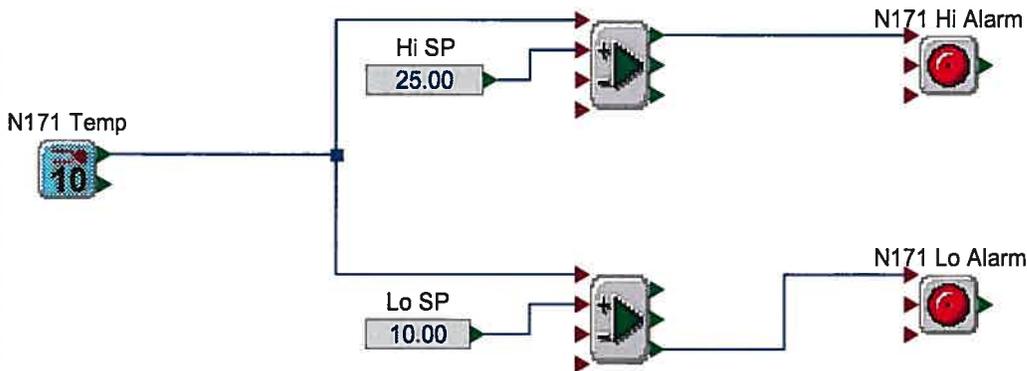
Alarms



XEC-3001

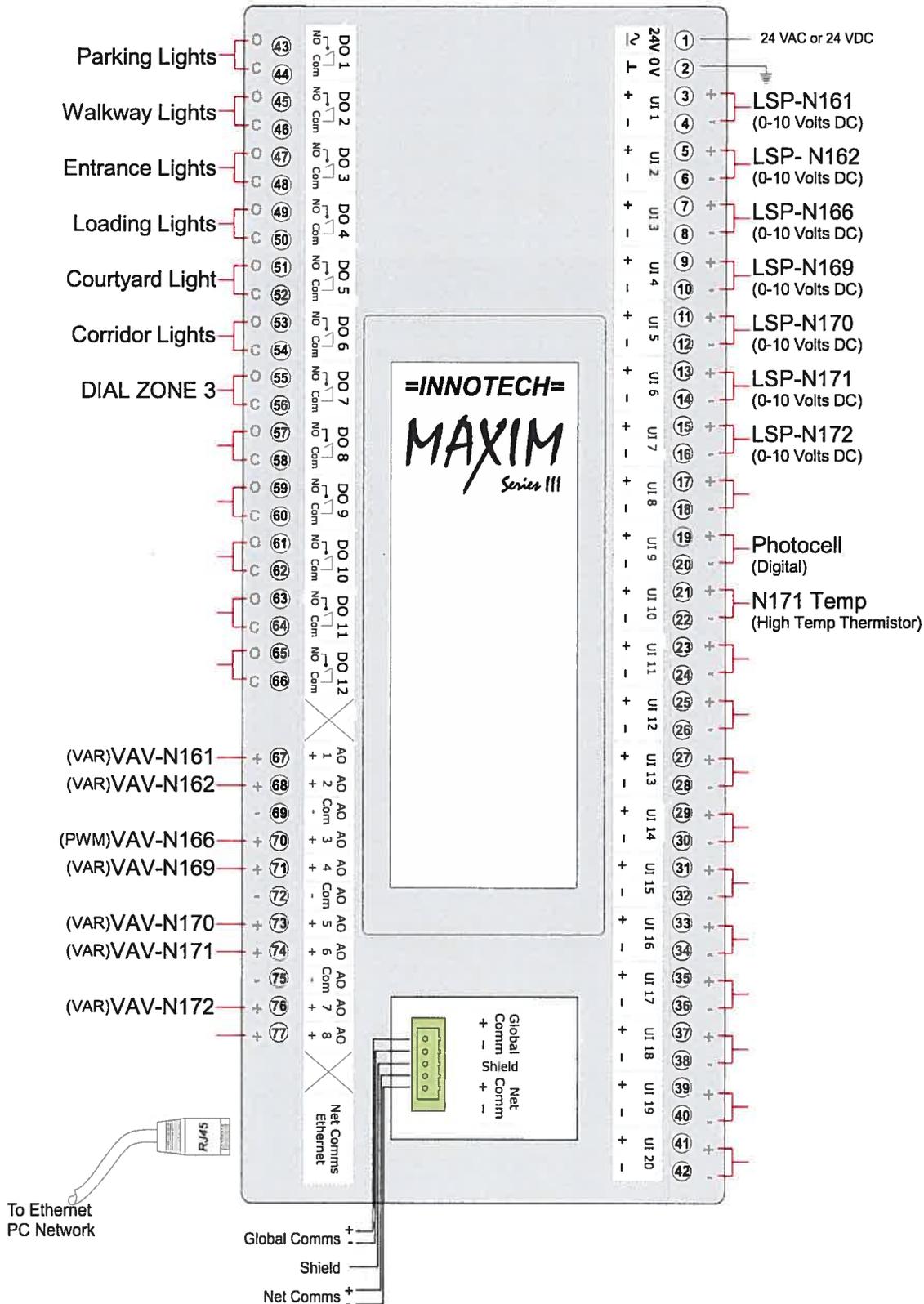


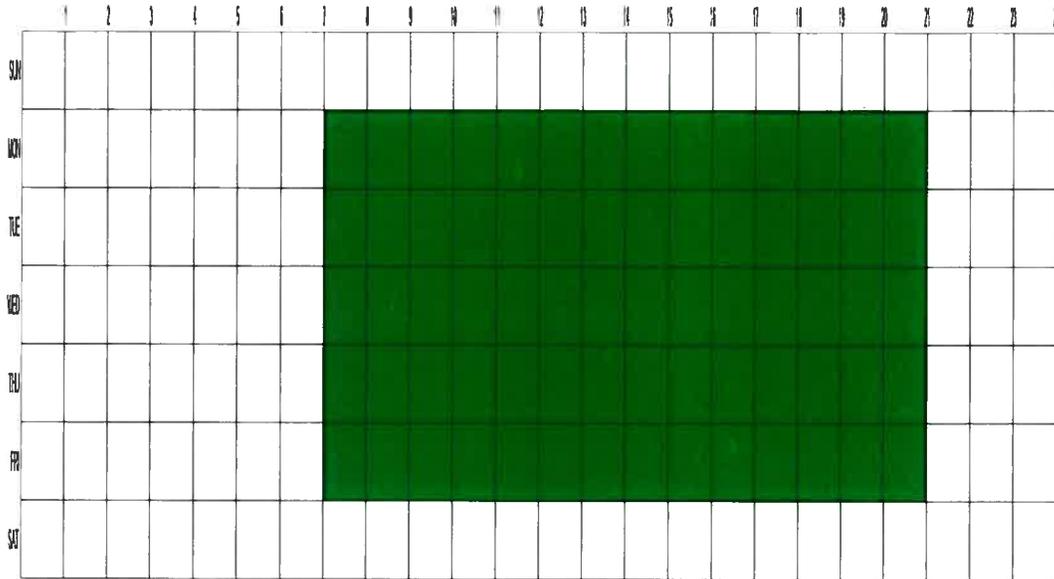
XEC-3001





Innotech MAXIM Series III Controller (v6.20)





Block: Weekly schedule

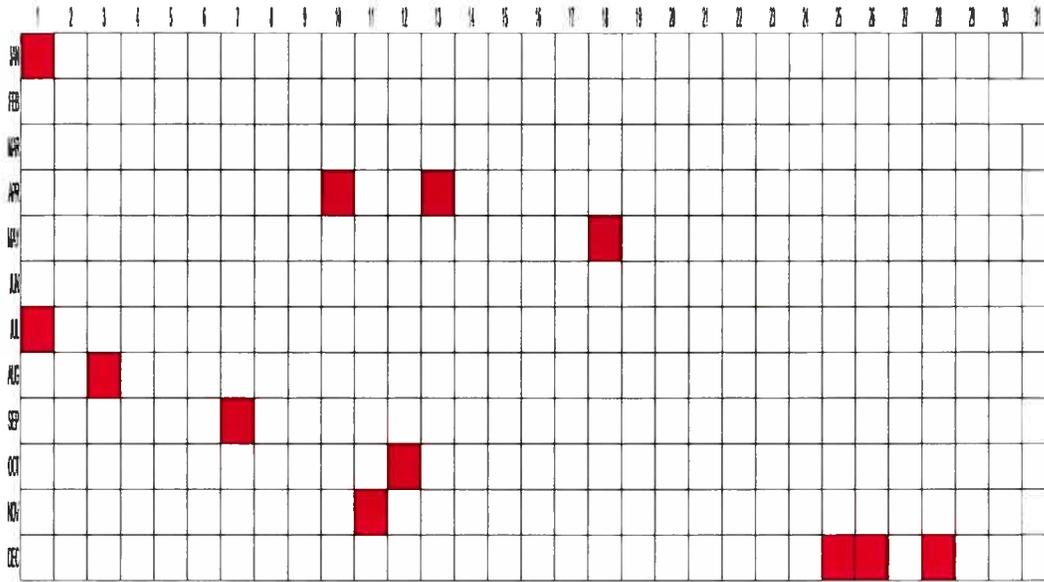
Schedule 1: Monday 7:00 to Monday 21:00

Schedule 2: Tuesday 7:00 to Tuesday 21:00

Schedule 3: Wednesday 7:00 to Wednesday 21:00

Schedule 4: Thursday 7:00 to Thursday 21:00

Schedule 5: Friday 7:00 to Friday 21:00

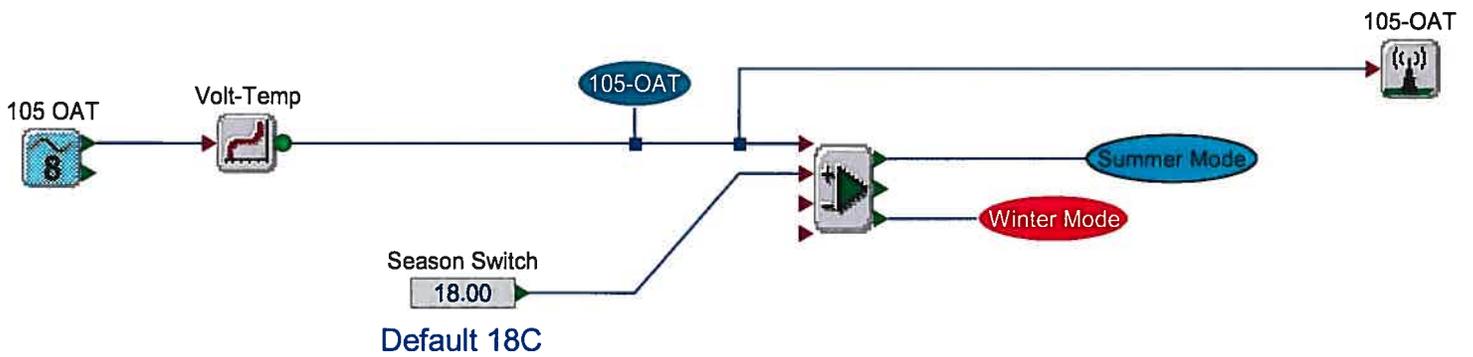


Block: Exceptions

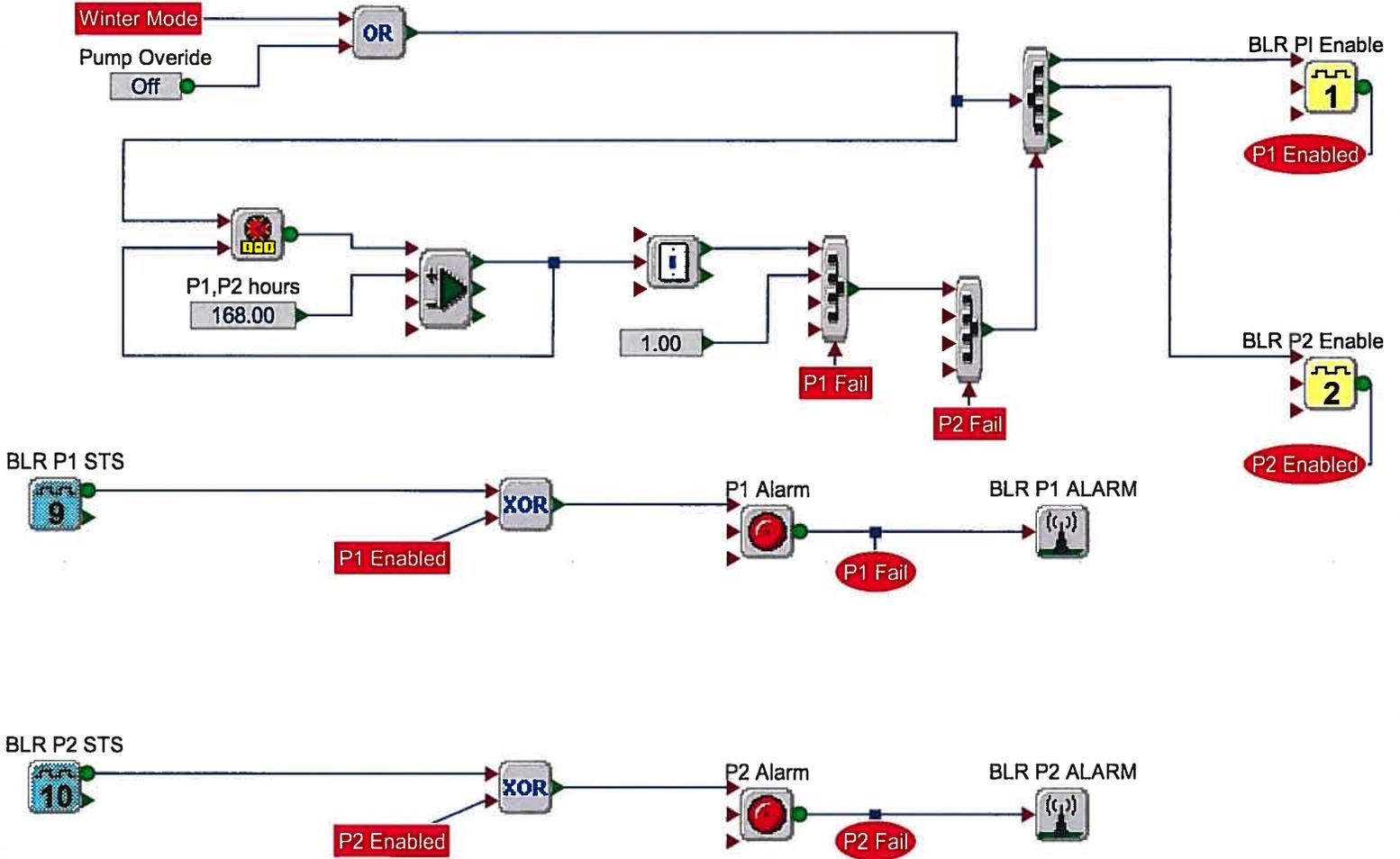
- Exception 1: OFF - January 1 @ 0:00 to January 1 @ 24:00
- Exception 2: OFF - April 10 @ 0:00 to April 10 @ 24:00
- Exception 3: OFF - April 13 @ 0:00 to April 13 @ 24:00
- Exception 4: OFF - May 18 @ 0:00 to May 18 @ 24:00
- Exception 5: OFF - July 1 @ 0:00 to July 1 @ 24:00
- Exception 6: OFF - August 3 @ 0:00 to August 3 @ 24:00
- Exception 7: OFF - September 7 @ 0:00 to September 7 @ 24:00
- Exception 8: OFF - October 12 @ 0:00 to October 12 @ 24:00
- Exception 9: OFF - November 11 @ 0:00 to November 11 @ 24:00
- Exception 10: OFF - December 25 @ 0:00 to December 26 @ 24:00
- Exception 11: OFF - December 28 @ 0:00 to December 28 @ 24:00

Panel 105 Controller 2

Boiler Controller

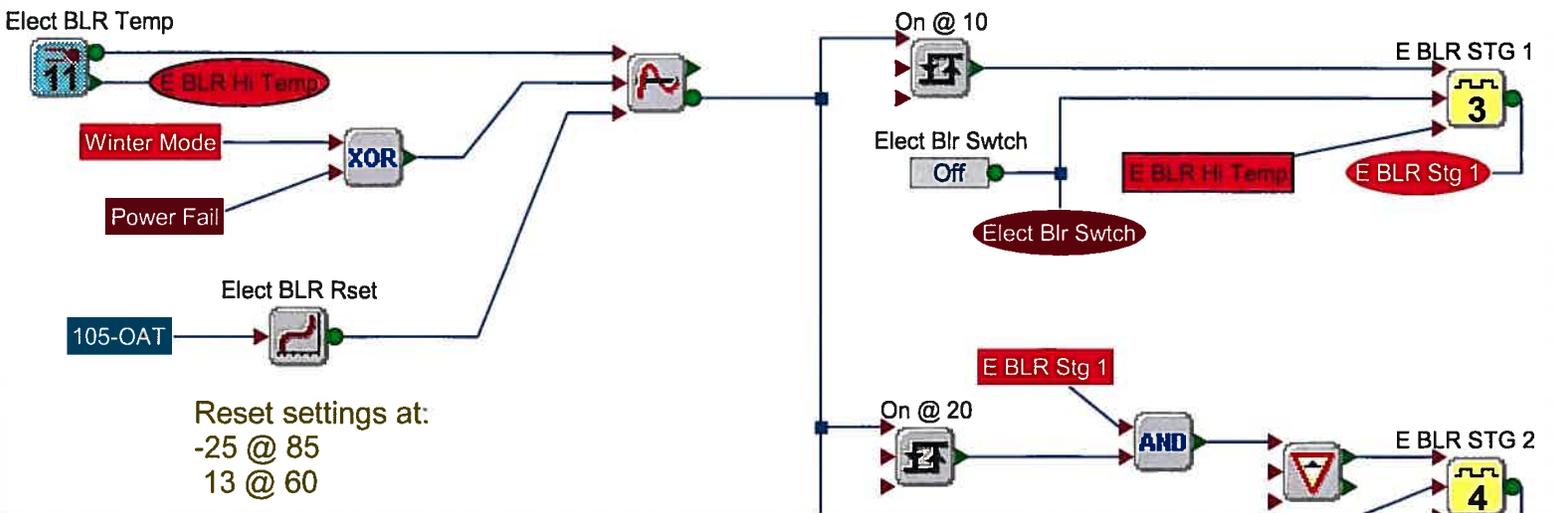


Pump Alternating program

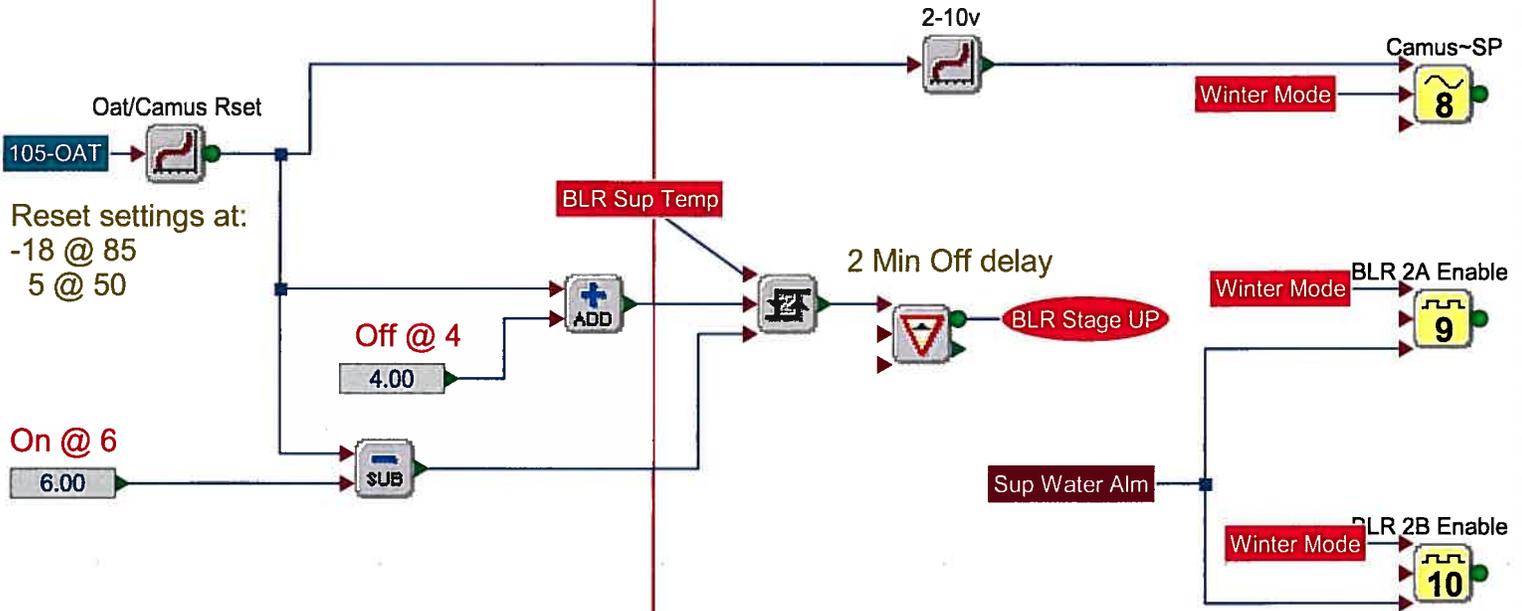


Coates Electric Boiler Staging

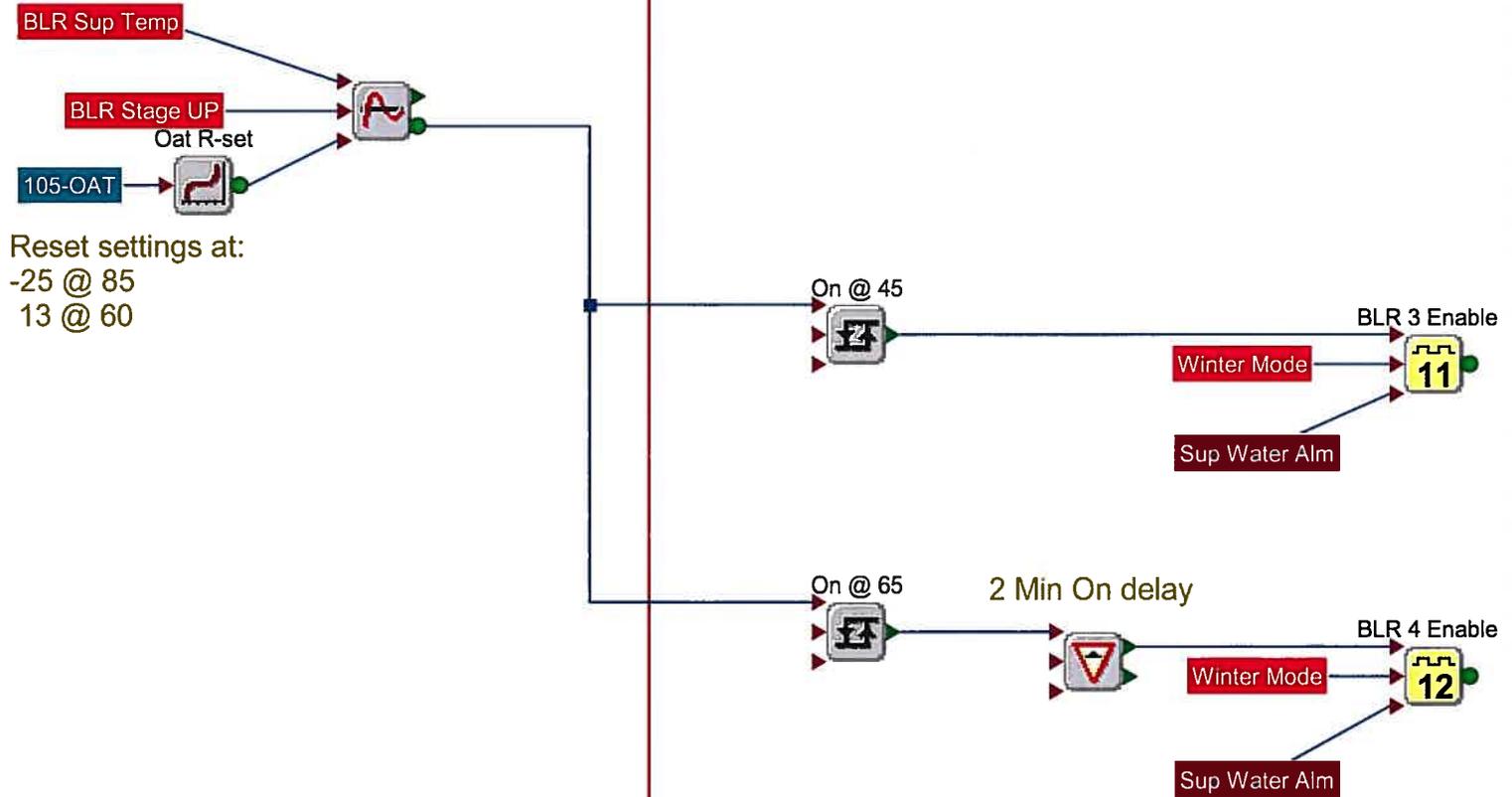
6 Stages Sequential

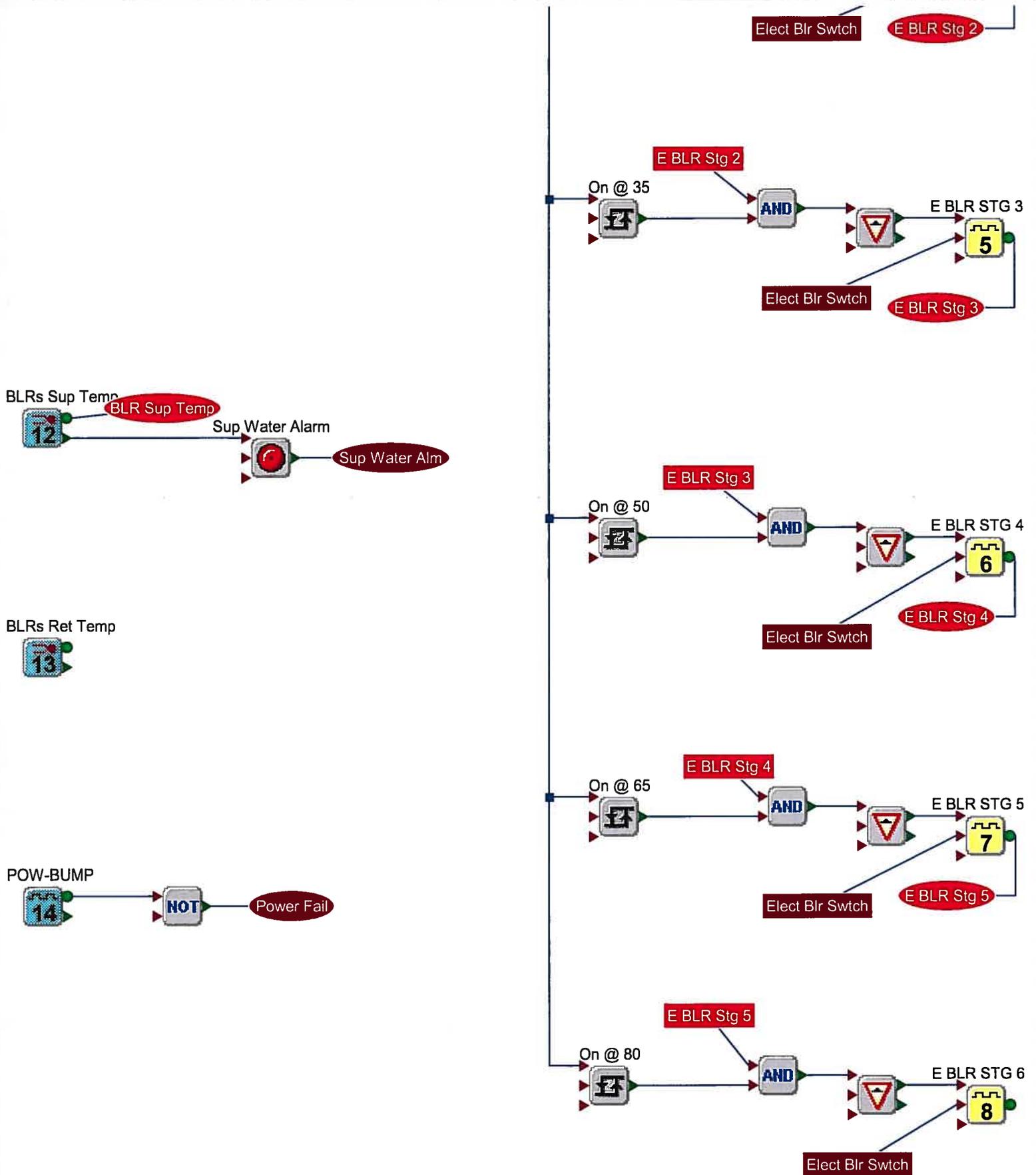


Camus Boilers 2A & 2B Control

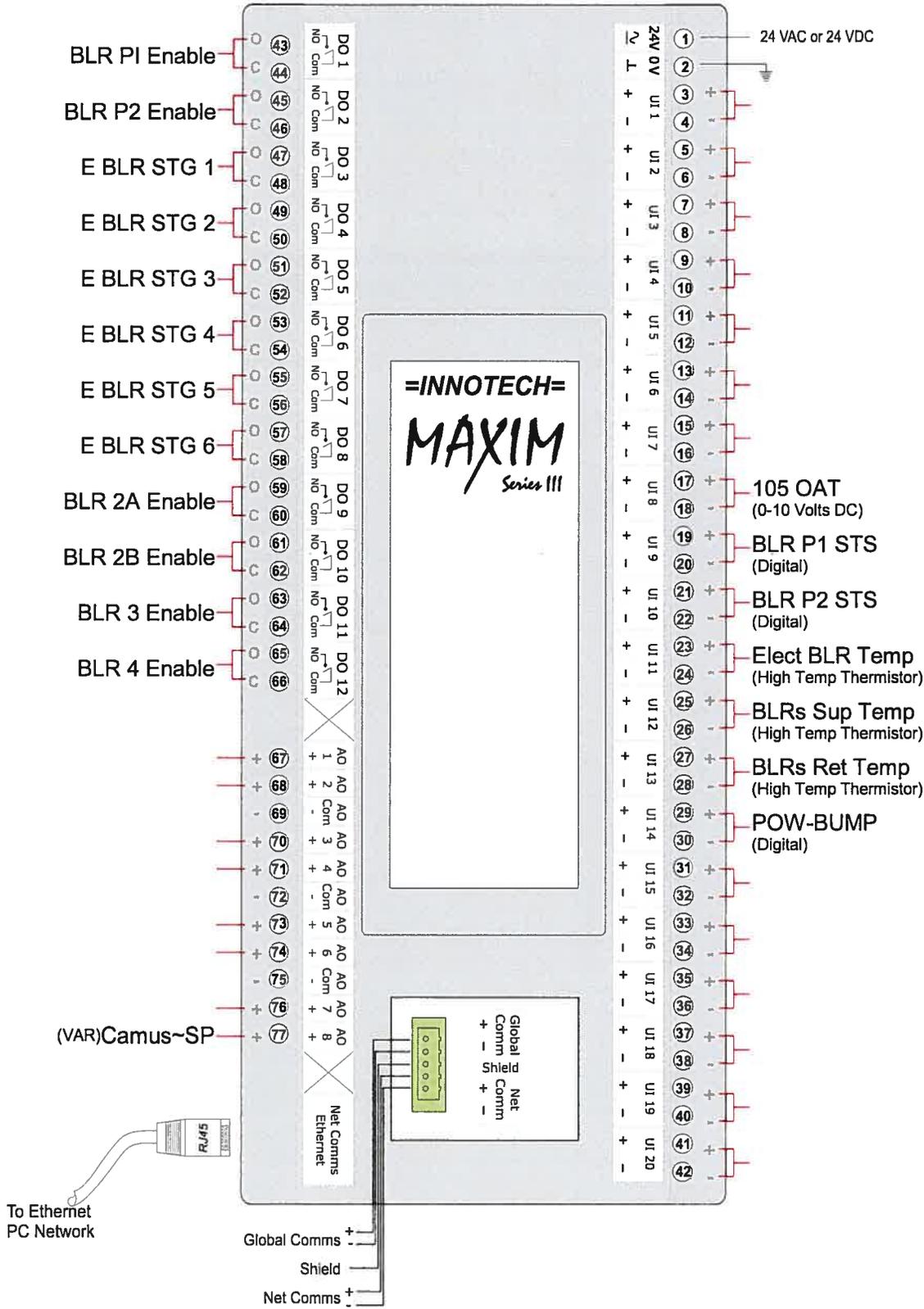


Cleaver Brooks Boilers 3 & 4 Staging



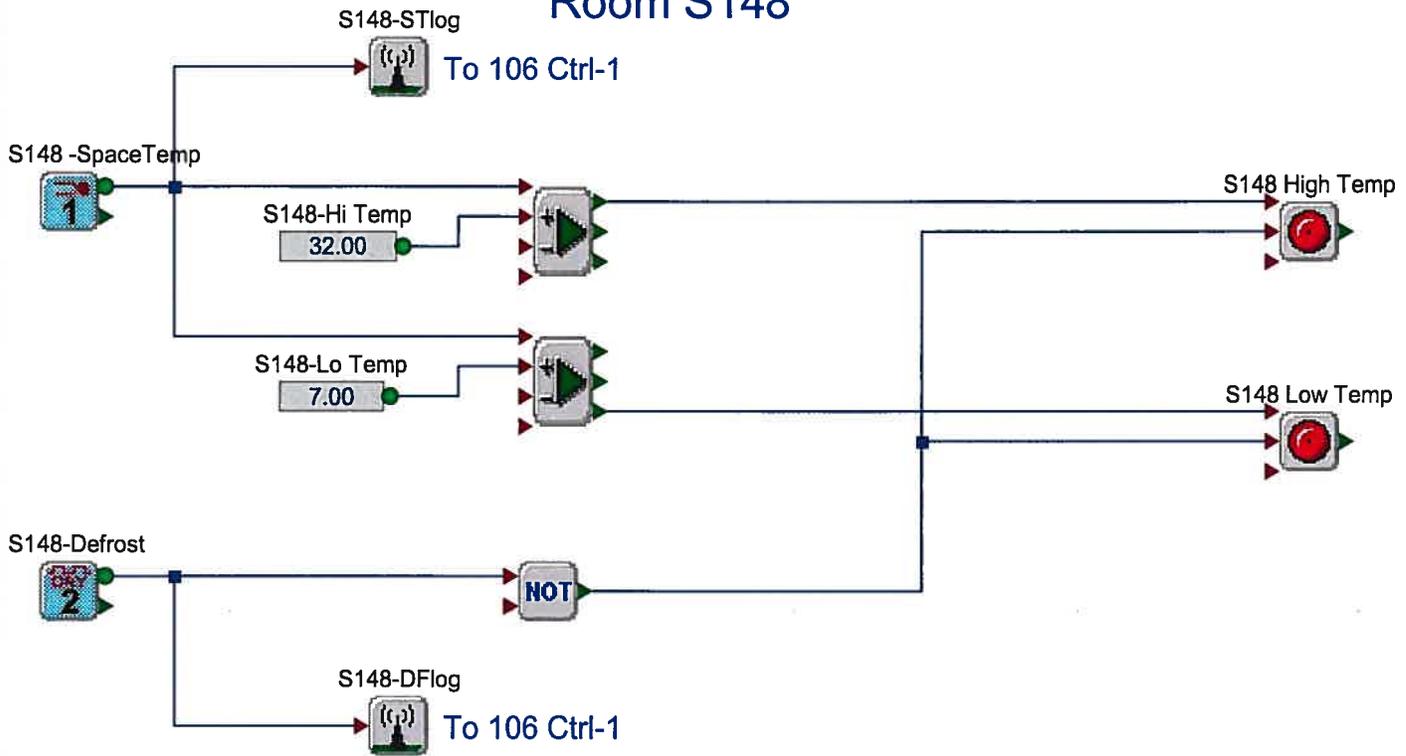


Innotech MAXIM Series III Controller (v6.20)

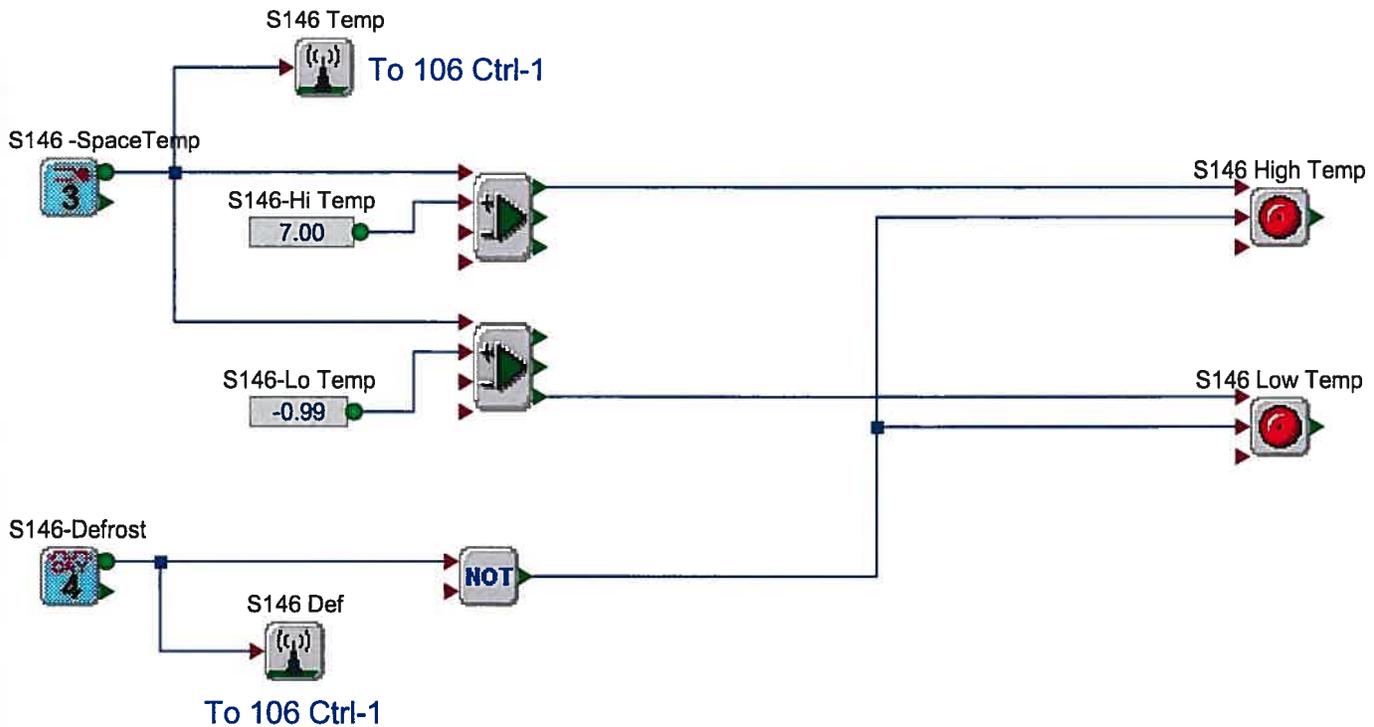


106 Ctrl2

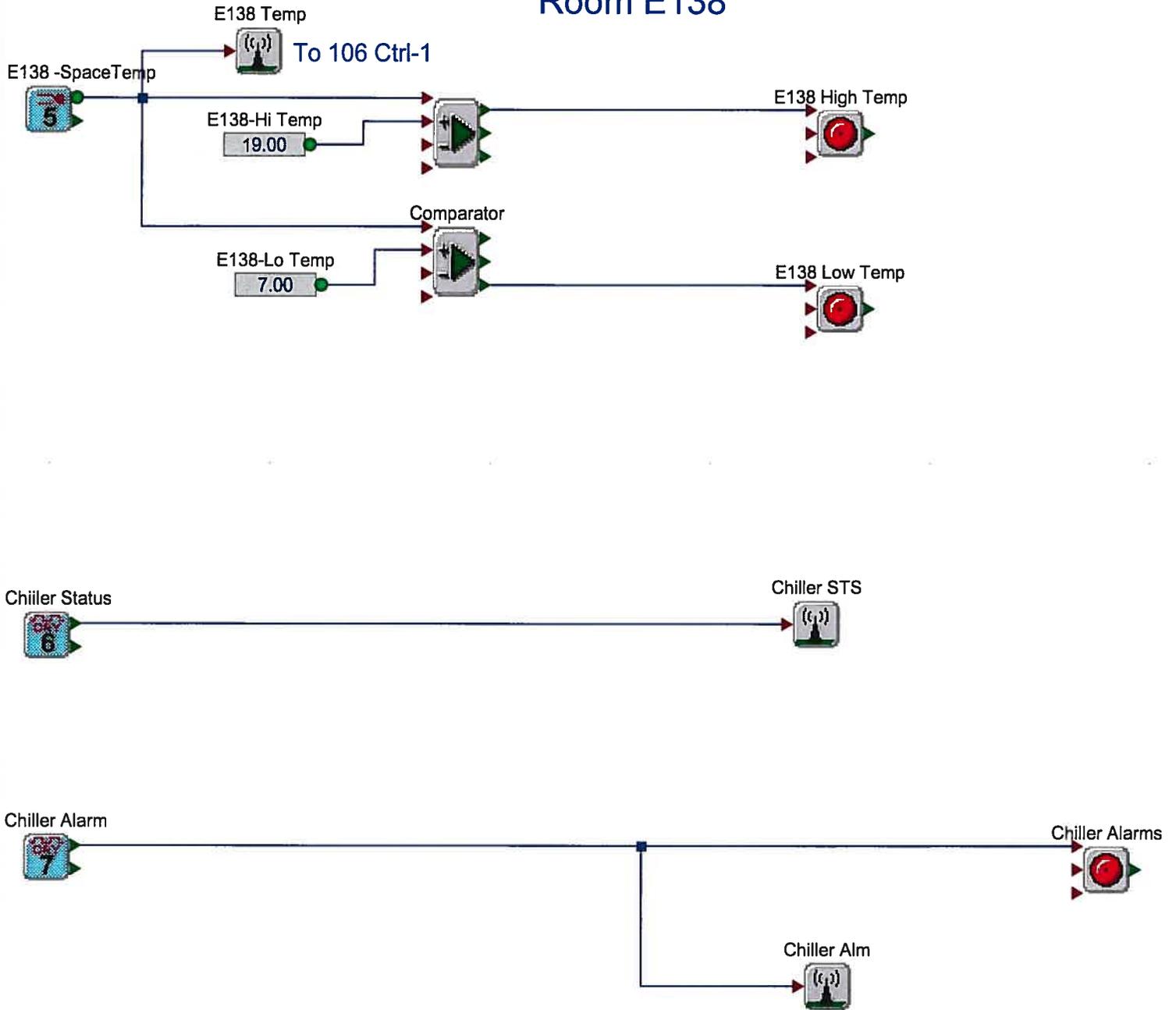
Room S148



Room S146



Room E138



Innotech MINIMAX (MM01) Controller (v6.30)

