

FURNACE

S 1 - A

Sanctuary Core

250,000 BTU/HR Duct & Stat Modulated
4,000 CFM 5 HP 230 VAC 3-PH
Enthalpy Modulated Min 88% RA 12% OA
T-stat IP: 192.168.1.180:8080

FURNACE

S 2

Ackerman Hall

250,000 BTU/HR Duct & Stat Modulated
3,500 CFM 5 HP 230 VAC 3-PH
Enthalpy Modulated Min 80% RA 20% OA
T-stat IP: 192.168.1.182:8082

FURNACE

S 4

Classrooms & Kitchen

200,000 BTU/HR Duct & Stat Modulated
3,100 CFM 2 HP 230 VAC 3-PH
Enthalpy Modulated Min 80% RA 20% OA
T-stat IP: 192.168.1.183:8083

FURNACE

S 1 - B

Sanctuary Core

250,000 BTU/HR Duct & Stat Modulated
4,000 CFM 5 HP 230 VAC 3-PH
Enthalpy Modulated Min 88% RA 12% OA
T-stat IP: 192.168.1.180:8080

FURNACE

S 3

Narthex & Windows

250,000 BTU/HR Duct & Stat Modulated
4,000 CFM 3 HP 230 VAC 3-PH
Enthalpy Modulated Min 88% RA 12% OA
T-stat IP: 192.168.1.181:8081

BOILER

B 1

Offices & Restrooms

624,000 BTU/HR 14.73 HP Single Stage
1/3 HP 120 VAC 1-PH
Steam 1558 SQ FT Max 15 PSI
T-stat IP: 192.168.1.184:8084

THERMOSTAT SETUP

Site Name: _____ Zone Name: _____
Serial Number: _____
Software Revision: _____ Hardware Revision: _____

REMOTE SENSOR #1 SETUP

Sensor Name: _____ Location: _____
Type: ☐ Thermister ☐ Analog Style: _____
State: ☐ Disabled ☐ Enabled
Sensor Averaging: ☐ Enabled ☐ Disabled
Sensor Offset Correction: _____ (-5 — +5 degrees)

REMOTE SENSOR #2 SETUP

Sensor Name: _____ Location: _____
Type: ☐ Thermister ☐ Analog Style: _____
State: ☐ Disabled ☐ Enabled
Sensor Averaging: ☐ Enabled ☐ Disabled
Sensor Offset Correction: _____ (-5 — +5 degrees)

CONTACT INFO

Name: _____
Address: _____
City/State/Zip: _____
Telephone: _____

SETBACK SCHEDULE

DAY CLASS	OCCUPIED			UNOCCUPIED			OTHER		
	TIME	TEMP	FAN	TIME	TEMP	FAN	TIME	TEMP	FAN
MORNING									
DAY									
EVENING									
NIGHT									

Temp: 45 – 95 Fan: 0, 15, 30, 45, 60 minutes per hour

ALARMS

Low Temperature Limit: ☐ Disable ☐ Enable _____
High Temperature Limit: ☐ Disable ☐ Enable _____
Filter Change Runtime Days: ☐ Disable ☐ Enable _____ (10, 30, 60, 90, 120, 240, 360)

FAILSAFE

Low Temperature: _____ (39 – 52 degrees)

PREFERENCES

Temperature Scale: ☐ Fahrenheit ☐ Celsius

Backlight: ☐ Off ☐ Delay

Display Contrast: _____ (5 – 60)

Daylight Savings Time: ☐ Disable ☐ Enable

AUTHENTICATION

Admin Login: admin Password: _____

User Login: _____ Password: _____

USER OVERRIDES

Button Lockout: ☐ Disable ☐ Enable

Set Point Override: ____ (0 – 20 degrees)

NETWORK SETUP

IP Setup: ☐ DHCP ☐ Static

Subnet: _____._____._____._____ Gateway: _____._____._____._____

IP Address: _____._____._____._____ HTTP Port: _____ Inbound Port: _____

Syslog IP: _____._____._____._____ Syslog Port: _____

MAC: ____:____:____:____:____:_____

ADVANCED SETUP

HVAC Mode: ☐ Heat ☐ Cool ☐ Auto ☐ Off

Fan Mode: ☐ Scheduled ☐ Auto ☐ On

HVAC Type: Fuel Burner

Heat Control: ☐ None ☐ Single State ☐ Dual Stage

Heat Offset (second stage): ☐ -2 ☐ -3 ☐ -4 ☐ -5 ☐ -6

Hold Mode Duration: ☐ Permanent ☐ 1 Hr ☐ 3 Hrs ☐ 8 Hrs ☐ 12 Hrs ☐ 24 Hrs

Fan On Heat: ☐ Enabled (forced on during heat cycle) ☐ Disabled

Set Point Differential: ☐ 2 +/- 1 ☐ 3 +/- 1.5 ☐ 4 +/- 2 ☐ 5 +/- 2.5 ☐ 6 +/- 3

Max Heat Cycles Per Hour: ☐ Enable _____ (1-12) ☐ Disable

All God's Children MCC

Space Use by Day of Week

SPACE	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	NOTES
Morning								
Afternoon								
Evening								
Morning								
Afternoon								
Evening								
Morning								
Afternoon								
Evening								
Morning								
Afternoon								
Evening								
Morning								
Afternoon								
Evening								
Morning								
Afternoon								
Evening								

SANCTUARY COMFORT SURVEY

Name _____ Date _____

Where were you seated? _____ (be specific)

What were you wearing? _____ (not *too* specific)

TIME Important!	SENSATION Warm, cold, drafty, etc.	ORIGIN OF SENSATION Floor, window, above, etc.	ACTIVITY Sitting, standing, singing, etc.	CORRELATIONS Don't fill this in please

Objective Measurements

Room temperature
Building temperature
Room humidity
Wind chill effect

Subjective Measurements

Warm
Cold
Drafty

Handy and Concise Guide to the Heating System

Thermostat Manual Controls

- Can temporarily override temperature
- Automatically resets after one hour
- All other functions locked out
- Please adjust temperature gradually

Thermostat Web Access

- Open Internet Explorer on any computer
- Type in thermostat name
- Status is on main page
- Login for additional settings and controls

My Login

Name

Password

Sanctuary

Zone

This zone covers the core of the sanctuary. Heat is supplied by four large ceiling vents, and returned through floor mushrooms. It has enormous heating and air exchange capacity to support large crowds.
Manage carefully!

Thermostat

Name: sanctuary
Location: East wall

Narthex

Zone

This zone covers the perimeter of the sanctuary including the entry area, balcony back wall, and window vents. It is designed to isolate drafts and fluctuations in temperature from the sanctuary.

Thermostat

Name: narthex
Location: By greeting table

Ackerman Hall

Zone

This zone covers the main social space in the lower level. It is designed for frequent use throughout the week without heating up an entire floor.

Thermostat

Name: ackerman
Location: On wall to the right of stage

Classrooms

Zone

This zone covers the perimeter of the lower level including classrooms, kitchen, and bookstore. It is designed to isolate drafts and fluctuations in temperature from Ackerman Hall.

Thermostat

Name: classrooms
Location: Toddlers room

Offices

Zone

This zone covers both floors of offices, the chapel, and the two restrooms adjacent to the bookstore. This zone is heated by steam radiators. Steam heat is slow to start, but packs a wallop once going; so adjust gradually. Most radiators have adjustment valves.

Thermostat

Name: offices
Location: Chapel east wall

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The new heating system is more energy efficient, responsive, and controllable than the old one. Balancing energy usage with comfort requires knowledge of how the system operates and following procedures.

Fundamentals

- The church is heated by five furnaces and one boiler
- There are five zones, each controlled by a thermostat
- Most functions are locked out on the thermostats
- Programmed temperature can be overridden by a few degrees up or down by using thermostat buttons
- The temperature is automatically reset after one hour
- Thermostats are managed by a web page accessible at any church computer
- Your login will determine how much control you will have over system settings and the temperature setback
- Remote access allows management from the Internet
- Alarms and trigger events are sent by email and cell phone
- The five forced air furnaces are fully modulating; they automatically adjust flame height and return/fresh air ratio based on demand

Recommendations

- Keep doors close between zones whenever possible
- User perimeter zones to maintain minimum temperatures when unoccupied
- Use perimeter zone fan to minimize drafts from doors opening and closing when occupied
- Pre-heat spaces at least an hour before occupancy so that the walls and furniture are at desired temperature
- Reduce temperature before crowds arrive; anticipate that a large crowd will raise the room temperature by several degrees
- The system is properly balanced to *not* overshoot the set temperature; this will only occur when a large crowd is not anticipated when setting the temperature
- Avoid quick temperature changes since the furnaces will meet the demand by modulating themselves into 'turbo mode' and consume more energy

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