

1 ELECTRIC UNIT HEATER
M-9910 N.T.S.

ELECTRIC UNIT HEATER

APPLICABLE UNITS:
 EUH-2-1 EUH-3-3 EUH-3-6 EUH-4-2 EUH-8-1
 EUH-3-1 EUH-3-4 EUH-3-7 EUH-4-3 EUH-8-2
 EUH-3-2 EUH-3-5 EUH-4-1 EUH-4-4

RUN CONDITIONS - CONTINUOUS:
 THE UNIT SHALL RUN AS REQUIRED TO MAINTAIN A HEATING SETPOINT OF 60°F (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

ZONE SETPOINT ADJUST:
 THE OCCUPANT SHALL BE ALLOWED TO ADJUST THE ZONE HEATING SETPOINT AT THE ZONE TEMPERATURE SENSOR.

FAN:
 THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE DROPS BELOW HEATING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

ELECTRIC HEATING STAGE:
 THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THE STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 55°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT BY 6°F (ADJ.).
- AND THE FAN IS ON.

DISCHARGE AIR TEMPERATURE:
 THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

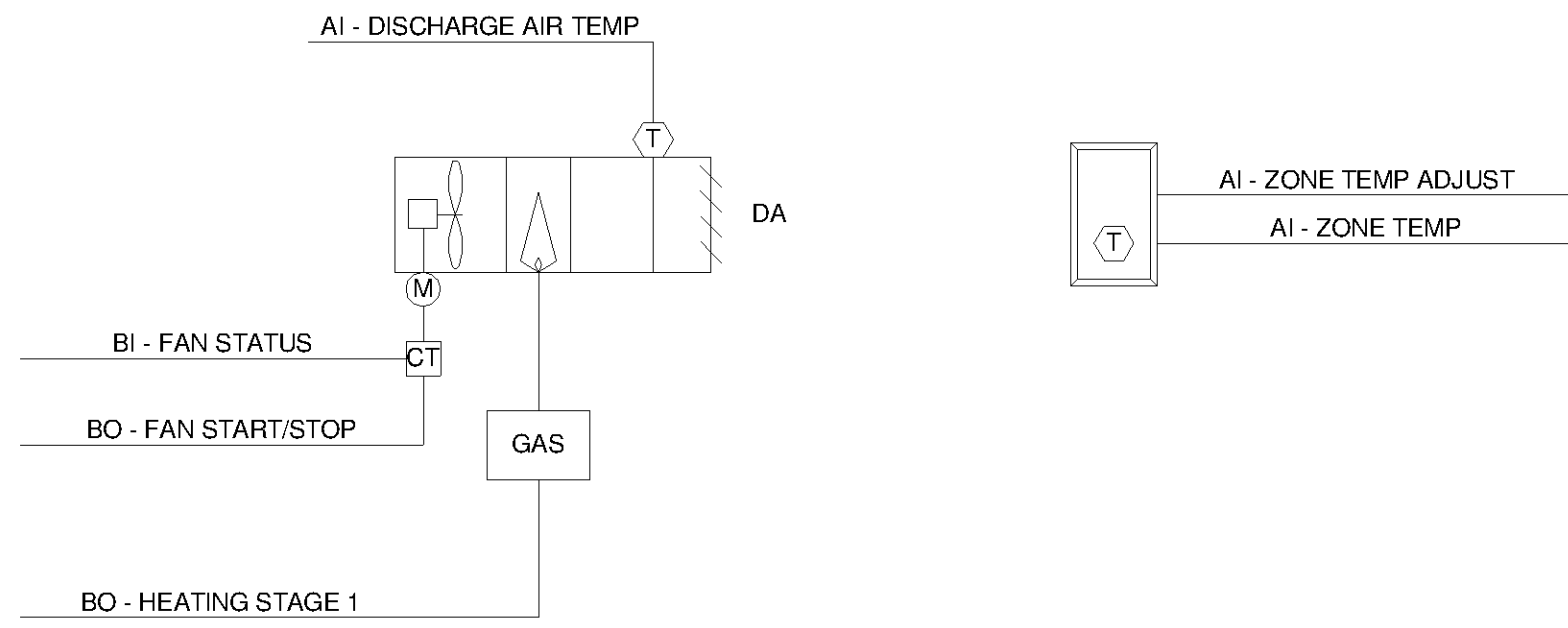
- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 55°F (ADJ.).

FAN STATUS:
 THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS				SHOW ON GRAPHIC	
	AI	AO	BI	BO	AV	BV	SCHED	TREND		ALARM
ZONE TEMP	X							X		X
DISCHARGE AIR TEMP	X							X		X
ZONE SETPOINT ADJUST	X									X
FAN STATUS			X					X		X
FAN START/STOP				X				X		X
HEATING STAGE 1				X				X		X
HEATING SETPOINT								X		X
LOW ZONE TEMP									X	
HIGH DISCHARGE AIR TEMP									X	
LOW DISCHARGE AIR TEMP									X	
FAN FAILURE									X	
FAN IN HAND									X	
FAN RUNTIME EXCEEDED									X	
TOTALS	3	0	1	2	0	0	0	6	6	7
TOTAL HARDWARE (6)					TOTAL SOFTWARE (12)					



2 GAS UNIT HEATER
M-9910 N.T.S.

GAS UNIT HEATER

APPLICABLE UNITS:
 UH-2-1 UH-2-3 UH-2-5
 UH-2-2 UH-2-4

RUN CONDITIONS - CONTINUOUS:
 THE UNIT SHALL RUN CONTINUOUSLY AS REQUIRED TO MAINTAIN A HEATING SETPOINT OF 60°F (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

ZONE SETPOINT ADJUST:
 THE OCCUPANT SHALL BE ALLOWED TO ADJUST THE ZONE HEATING SETPOINT AT THE ZONE TEMPERATURE SENSOR.

FAN:
 THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE DROPS BELOW HEATING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

GAS HEATING STAGE:
 THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THE STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 55°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT BY 6°F (ADJ.).
- AND THE FAN IS ON.

DISCHARGE AIR TEMPERATURE:
 THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 55°F (ADJ.).

FAN STATUS:
 THE CONTROLLER SHALL MONITOR THE FAN STATUS.

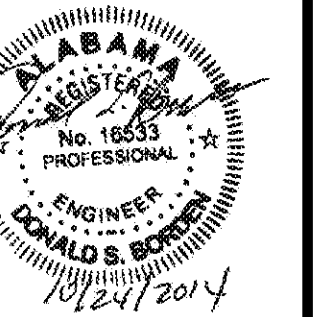
ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS				SHOW ON GRAPHIC	
	AI	AO	BI	BO	AV	BV	SCHED	TREND		ALARM
ZONE TEMP	X							X		X
DISCHARGE AIR TEMP	X							X		X
ZONE SETPOINT ADJUST	X									X
FAN STATUS			X					X		X
FAN START/STOP				X				X		X
HEATING STAGE 1				X				X		X
HEATING SETPOINT								X		X
LOW ZONE TEMP									X	
HIGH DISCHARGE AIR TEMP									X	
LOW DISCHARGE AIR TEMP									X	
FAN FAILURE									X	
FAN IN HAND									X	
FAN RUNTIME EXCEEDED									X	
TOTALS	3	0	1	2	0	0	0	6	6	7
TOTAL HARDWARE (6)					TOTAL SOFTWARE (12)					



BID SET



BY	DATE	MARK	DESCRIPTION

HUNTSVILLE UTILITIES
 SOUTHEAST WATER TREATMENT PLANT
**MECHANICAL HVAC
 CONTROLS**

Project No.: 200-11740-10003
 Designed By: SBR
 Drawn By: BJZ
 Checked By: DSB

M-9910