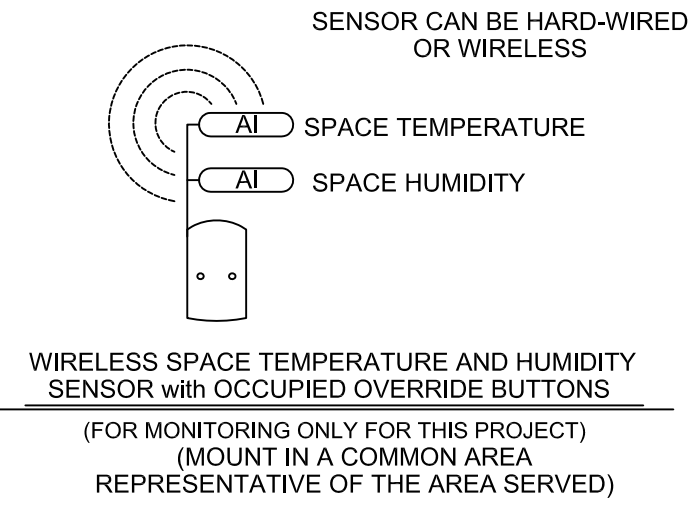


- 1 SMOKE DETECTORS ARE FURNISHED AND WIRED BY THE ELECTRICAL DIVISION TO INTERFACE WITH THE BUILDING FIRE ALARM PANEL (FAP). INTERLOCK FAP SHUTDOWN RELAY WITH THE SUPPLY FAN VFD TO STOP THE FAN ON AN ALARM CONDITION.
- 2 SEE THE MECHANICAL DRAWING'S SCHEDULES FOR THE NUMBER OF HEATING AND COOLING STAGES REQUIRED.
- 3 WIRE SAFETY DEVICES IN SERIES WITH SUPPLY FAN VFD'S INTERLOCK CIRCUIT TO STOP THE FAN IN AN ALARM CONDITION.
- 4 SCHEMATIC CONTROL FLOW DIAGRAM ONLY. SEE MECHANICAL DRAWINGS FOR DUCTWORK AND PIPING DETAILS.
- 5 120VAC POWER TO DDC CONTROL PANELS BY ELECTRICAL CONTRACTOR.
- XX CONTROL POINTS WIRED BACK TO THE FACTORY MOUNTED UNIT CONTROLLER.



SYSTEM POINTS LIST (EXISTING BASEMENT AIR HANDLING UNIT)												
CONTROLLER: BACnet AHU		POINT TYPE						ALARMS				
SYSTEM POINT DESCRIPTION												
MONITOR EXISTING BASEMENT AHU												
	GRAPHIC	HARDWARE INPUT	HARDWARE OUTPUT	SOFTWARE POINT	HARDWARE INTERLOCK	WIRELESS	NETWORK	DEFAULT VALUE	HIGH ANALOG LIMIT	LOW ANALOG LIMIT	BINARY	DIAGNOSTICS
DISCHARGE AIR TEMPERATURE	X	AI							X	X		SENSOR FAILURE
BASEMENT AHU FILTER STATUS	X	AI							X	X		SENSOR FAILURE
BASEMENT AHU FAN START/STOP	X		BO								X	
BASEMENT AHU SUPPLY FAN STATUS	X	BI										NOTE 2, NOTE 4
AHU COOLING COIL LEAVING AIR TEMPERATURE	X	AI						X	X		X	SENSOR FAILURE
RE-HEAT LEAVING AIR TEMPERATURE	X	AI						X	X		X	SENSOR FAILURE
COMMON SPACE TEMPERATURE	X	AI						X	X		X	NOTE 4
COMMON SPACE HUMIDITY	X	AI						X	X		X	NOTE 4
MAINTENANCE REQUIRED			X									NOTE 3
BAS COMMUNICATION STATE	X			X				600 HRS				NOTE 3
GENERAL NOTES												
NOTE 1: USE AUX CONTACT CLOSURE IN THE SMOKE DETECTOR FOR THE PRESENCE OF SMOKE ALARM TO BAS. SEE MECH DWGS FOR DETAILS ON EXISTING SMOKE DET.												
NOTE 2: INSTALL A CURRENT SENSING SWITCH IN THE SUPPLY FAN VFD OR STARTER ENCLOSURE FOR POSITIVE PROOF OF AIR FLOW.												
NOTE 3: SEE MECHANICAL DRAWINGS OR SPECIFICATIONS FOR REQUIREMENTS AND QUANTITIES OF DEVICES, NUMBER OF HEATING STAGES, ETC.												
NOTE 4: EXISTING BASEMENT AHU. INTEGRATE POINTS INTO THE NEW BAS SYSTEM.												

EXISTING BASEMENT AIR HANDLER (TYPICAL FOR ONE)

SEQUENCE OF OPERATION

BUILDING AUTOMATION SYSTEM INTERFACE:

THE TRANE TRACER SYSTEM CONTROLLER (SC) IS THE BUILDING AUTOMATION SYSTEM (BAS) BASIS OF DESIGN. THE BUILDING AUTOMATION SYSTEM (BAS) WILL COMMUNICATE TO THE EXISTING AHU CONTROLLER AN OCCUPIED, UNOCCUPIED, AND TIMED OVERRIDE COMMANDS. IF COMMUNICATION IS LOST WITH THE BAS, OR A BAS IS NOT PRESENT, THE AHU'S CONTROLLER SHALL CONTROL TO THE DEFAULT SETTINGS INSTALLED AT COMMISSIONING/START-UP.

OCCUPIED MODE:

DURING OCCUPIED PERIODS, THE SUPPLY FAN SHALL START AND RUN CONTINUOUSLY. THE OUTDOOR AIR DAMPER SHALL BE UNDER CONTROL OF THE EXISTING CONTROLLER.

THE BAS SHALL MONITOR THE FOLLOWING POINTS ON THE BASEMENT AIR HANDLER:

- DISCHARGE AIR TEMPERATURE (HIGH / LOW ALARM)
- FAN START/STOP (OCC / UNOCC, ETC.)
- FAN STATUS
- LOCAL SPACE TEMPERATURE
- LOCAL SPACE HUMIDITY
- FILTER STATUS (MAINTENANCE)
- COOLING COIL LEAVING AIR TEMPERATURE
- RE-HEAT COIL LEAVING AIR TEMPERATURE

SPACE (TEMPERATURE CONTROL):

THE NEW BAS SHALL BE CAPABLE OF ADDING SPACE TEMPERATURE CONTROL AS WELL AS OUTDOOR AIR DAMPER AND COOLING AND HEATING VALVE CONTROL AT A FUTURE DATE.

EXISTING SMOKE DETECTOR SHUTDOWN:

THE SUPPLY AIR SMOKE DETECTOR SHALL NOTIFY THE BUILDING FIRE ALARM PANEL (SYSTEM) IN RESPONSE TO DETECTING THE PRESENCE OF SMOKE. UPON DETECTION OF SMOKE BY THE DETECTOR, THE ADDRESSABLE RELAY FROM THE BUILDING FIRE ALARM SYSTEM SHALL SHUTDOWN THE RTU. THE SMOKE DETECTOR SHALL NOTIFY THE BAS UNIT THROUGH THE DRY CONTACTS OF THE SMOKE DETECTOR IF SPECIFIED. A MANUAL RESET OF THE SMOKE DETECTOR SHALL BE REQUIRED TO RESTART THE UNIT.

FILTER STATUS:

A FILED MOUNTED DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER SECTION. WHILE THE FAN IS RUNNING, IF THE SWITCH CLOSURES, SET AT 1.0"W.C. (ADJ.), FOR 2 MINUTES, A DIRTY FILTER ALARM SHALL BE ANNUNCIATED AT THE BAS.

EXISTING BASEMENT AHU CONTROLS

SYSTEM POINTS LIST (VARIABLE AIR VOLUME AHU-1 SHOWN)												
CONTROLLER: BACnet AHU		POINT TYPE						ALARMS				
SYSTEM POINT DESCRIPTION												
TYPICAL FOR RTU-2												
	GRAPHIC	HARDWARE INPUT	HARDWARE OUTPUT	SOFTWARE POINT	HARDWARE INTERLOCK	WIRELESS	NETWORK	DEFAULT VALUE	HIGH ANALOG LIMIT	LOW ANALOG LIMIT	BINARY	DIAGNOSTICS
DISCHARGE AIR TEMPERATURE	X	AI							X	X		SENSOR FAILURE
SUPPLY AIR SMOKE DETECTOR	X	BI			X						X	NOTE 1
RETURN AIR SMOKE DETECTOR	X	BI			X						X	NOTE 1
FILTER STATUS	X	BI										DIRTY FILTER
OUTDOOR AIR TEMPERATURE	X	AI						X	X		X	SENSOR FAILURE
RETURN AIR DAMPER ACTUATOR	X	AO						X	X			SENSOR FAILURE
DISCHARGE AIR STATIC PRESSURE	X	AI						X	X		X	SENSOR FAILURE
RE-HEAT COIL CONTROL VALVE CONTROL	X	AO										NOTE 3
COOLING COIL CONTROL VALVE CONTROL	X	AO										NOTE 3
PRE-HEAT COIL CONTROL VALVE CONTROL	X	AO										NOTE 3
SUPPLY FAN VFD START/STOP	X	BO									X	NOTE 2
SUPPLY FAN VFD STATUS	X	BI										
SUPPLY FAN VFD SPEED COMMAND	X	AO										
SUPPLY FAN VFD SPEED FEEDBACK	X	AI						X	X			SENSOR FAILURE
RETURN AIR TEMPERATURE	X	AI						X	X		X	SENSOR FAILURE
RETURN AIR HUMIDITY	X	AI						X	X		X	SENSOR FAILURE
RETURN AIR SMOKE DAMPER	X	BO									X	
RETURN AIR SMOKE DAMPER END SWITCH	X	BI									X	
SUPPLY AIR SMOKE DAMPER	X	BO									X	
SUPPLY AIR SMOKE DAMPER END SWITCH	X	BI									X	
WIRELESS COMMON ZONE-1 TEMP & OVERRIDE	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-2 TEMP & OVERRIDE	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-3 TEMP & OVERRIDE	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-4 TEMP & OVERRIDE	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-5 TEMP & OVERRIDE	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-1 HUMIDITY	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-2 HUMIDITY	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-3 HUMIDITY	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-4 HUMIDITY	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-5 HUMIDITY	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-1 CO2 PPM	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-2 CO2 PPM	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-3 CO2 PPM	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-4 CO2 PPM	X	AI						X	X		X	SENSOR FAILURE
WIRELESS COMMON ZONE-5 CO2 PPM	X	AI						X	X		X	SENSOR FAILURE
COMMON ZONE SENSORS OCCUPIED OVERRIDE	X	BI										PROGRAMMABLE
COMMON ZONE SENSORS OCCUPIED CANCEL	X	BI										PROGRAMMABLE
RTU-1 PRE-HEAT LEAVING AIR TEMPERATURE	X	AI						X	X		X	SENSOR FAILURE
RTU-1 COOLING COIL LEAVING AIR TEMPERATURE	X	AI						X	X		X	SENSOR FAILURE
RTU-1 RE-HEAT LEAVING AIR TEMPERATURE	X	AI						X	X		X	SENSOR FAILURE
OCCUPANCY					X							
OCCUPIED COOLING SETPOINT					X			74.0 deg. F				
OCCUPIED HEATING SETPOINT					X			70.0 deg. F				
OCCUPIED STANDBY COOLING SETPOINT					X			80.0 deg. F				
OCCUPIED STANDBY HEATING SETPOINT					X			65.0 deg. F				
UNOCCUPIED COOLING SETPOINT					X			85.0 deg. F				
UNOCCUPIED HEATING SETPOINT					X			60.0 deg. F				
OCCUPIED BYPASS TIMER					X			2.0 HRS				
HEATING MODE SETPOINT					X							NOTE 3
COOLING MODE SETPOINT					X							NOTE 3
SUPPLY AIR PRESSURE SETPOINT					X							NOTE 3
SPACE RELATIVE HUMIDITY SETPOINT					X			50%			X	DIAGNOSTIC ALARM STATUS
SPACE CO2 LIMIT					X			900 PPM				NOTE 3
SETPOINT OFFSET					X							NOTE 3
COMPRESSOR ENABLE					X							NOTE 3
ECONOMIZER ENABLE					X							NOTE 3
HEAT / COOL MODE					X							NOTE 3
FAN MODE COMMAND					X							NOTE 3
APPLICATION MODE					X							NOTE 3
OUTSIDE AIR DAMPER MINIMUM POSITION					X							NOTE 3
EFFECTIVE OCCUPANCY					X							NOTE 3
EFFECTIVE HEAT / COOL MODE					X							NOTE 3
EFFECTIVE SPACE TEMPERATURE					X							NOTE 3
EFFECTIVE SPACE SETPOINT					X							NOTE 3
LOCAL SETPOINT					X							NOTE 3
HEAT OUTPUT					X							NOTE 3
COOL OUTPUT					X							NOTE 3
ALARM					X							NOTE 3
SUPPLY AIR HEATING/COOLING SETPOINT					X							NOTE 3
MAINTENANCE REQUIRED					X			600 HRS				NOTE 3
BAS COMMUNICATION STATE					X							NOTE 3
GENERAL NOTES												
NOTE 1: USE AUX CONTACT CLOSURE IN THE SMOKE DETECTOR FOR THE PRESENCE OF SMOKE ALARM TO BAS. SEE MECH DWGS FOR DETAILS ON EXISTING SMOKE DET.												
NOTE 2: INSTALL A CURRENT SENSING SWITCH IN THE SUPPLY FAN VFD OR STARTER ENCLOSURE FOR POSITIVE PROOF OF AIR FLOW.												
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NOTE 4:												

NEW AHU-1 & 2 CONTROLS



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ROOFTOP HVAC REPLACEMENT
DOYLE CONNER LAB ADMIN BUILDING
TALLAHASSEE, FLORIDA

FL. DEPT. OF AGRICULTURE &
CONSUMER SERVICES

DATE:
November 10, 2017

REVISION 1 - ADDENDUM 1 12/6/17

DESIGNED BY:
PJM

DRAWN BY:
TEP

SUBMITTAL:
CONSTRUCTION DOCUMENTS

SHEET TITLE:
MECHANICAL
NEW CONTROLS POINTS LIST
EXISTING CONTROLS - BASEMENT AHU

SHEET:

M5.2

JOB NUMBER:

1712