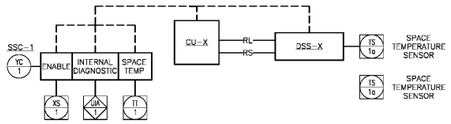


IT ROOM & ELEC. ROOM SPLIT SYSTEM SEQUENCE OF OPERATION

GENERAL:

A. SEE PLANS FOR LOCATIONS OF ALL EQUIPMENT; WHERE SUCH DEVICES ARE NOT INDICATED, BUT ARE REQUIRED BY THE SEQUENCES, THEY SHALL BE PROVIDED BY THE CONTRACTOR AND LOCATED IN THE FIELD BY THE ENGINEER.

B. UNIT SHALL BE PROVIDED WITH HOA SWITCH AND SHALL RUN CONTINUOUSLY 24/7. UNIT SHALL BE PROVIDED WITH A WALL MOUNTED FACTORY CONTROLLER (SSC-1). SYSTEM SHALL BE CONTROLLED VIA SSC-1. UNIT SHALL BE OPERABLE LOCALLY AND VIA THE BMS VIA COMMUNICATION INTERFACE WITH SSC-1.

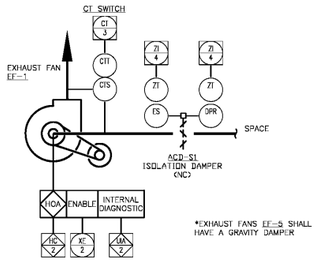
C. AN ALARM SHALL BE GENERATED TO THE BMS WHENEVER THE UNIT INTERNAL DIAGNOSTIC ALARMS.

D. SPACE TEMPERATURE SHALL BE ADJUSTABLE LOCALLY THROUGH THE UNIT CONTROLLER SSC-1.

E. COMPRESSOR CU-X SHALL MODULATE AS REQUIRED TO SATISFY DSS-X DEMANDS. DSS-X SHALL CYCLE ON ONLY WHEN RESPECTIVE SPACE CALLS FOR COOLING AND SHALL BE OFF WHEN RESPECTIVE SPACE TEMPERATURE SET POINT OF 75°F (ADJ) IS SATISFIED.

F. SPACE TEMPERATURE SHALL BE MONITORED VIA SEPARATE TEMPERATURE SENSOR AND VISIBLE ON BMS.

G. AN ALARM SHALL BE GENERATED AT THE BMS WHENEVER THE SPACE TEMPERATURE SENSOR REACHES THE HIGH LIMIT ALARM SETPOINT.



*EXHAUST FANS EF-5 SHALL HAVE A GRAVITY DAMPER

TYPICAL EXHAUST FAN SYSTEM SEQUENCE OF OPERATION (TYP. OF 7)

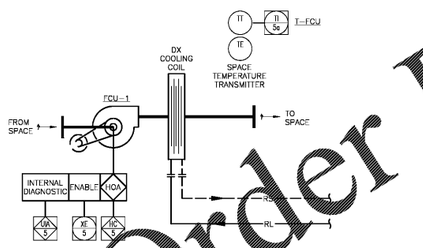
GENERAL:

A. SEE PLANS FOR LOCATIONS OF ALL DEVICES AND EQUIPMENT; WHERE SUCH DEVICES ARE NOT INDICATED, BUT ARE REQUIRED BY THE SEQUENCES, THEY SHALL BE PROVIDED BY CONTRACTOR AND LOCATED IN THE FIELD BY THE ENGINEER. EXHAUST FANS SHALL SHUT DOWN UPON FIRE ALARM.

B. ACD-S1 OPERATION: AUTOMATIC CONTROL DAMPER SHALL OPEN WHEN CORRESPONDING EXHAUST FAN(S) ARE ENABLED AND SHALL CLOSE WHEN CORRESPONDING EXHAUST FAN(S) ARE DISABLED. IF ANY AUTOMATIC CONTROL DAMPER FAILS TO OPEN OR CLOSE AS DETERMINED BY THEIR RESPECTIVE END SWITCHES AN ALARM SHALL BE SENT TO THE BMS.

C. EXHAUST FANS SHALL BE PROVIDED WITH HOA CONTROL AND SHALL BE STARTED LOCALLY OR VIA THE BMS. WHEN HOA SWITCH IS IN OFF, FAN SHALL BE OFF AND BMS CONTROL SHALL BE DISABLED. WHEN HOA SWITCH IS IN HAND THE FAN SHALL BE ON AND CCMS CONTROL SHALL BE DISABLED. WHEN HOA SWITCH IS IN AUTO FAN SHALL OPERATE VIA BMS CONTROL.

D. EXHAUST FANS SHALL BE ENABLED DURING OCCUPIED PERIODS AND DISABLED DURING UNOCCUPIED PERIODS BY THE BMS.



FAN COIL UNIT SEQUENCE OF OPERATION

GENERAL:

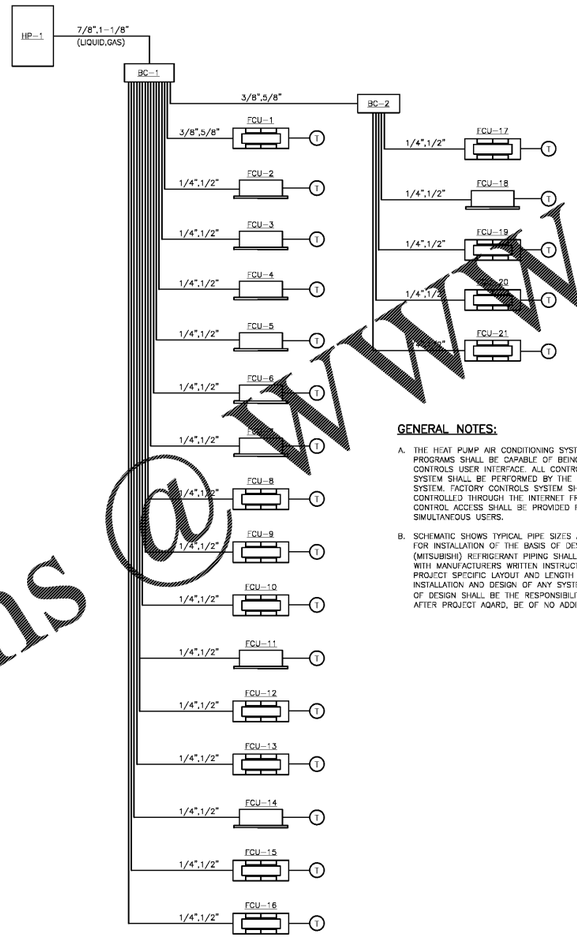
A. SEE PLANS FOR LOCATIONS OF ALL DAMPERS AND EQUIPMENT; WHERE SUCH DEVICES ARE NOT INDICATED, BUT ARE REQUIRED BY THE SEQUENCES, THEY SHALL BE PROVIDED BY THE CONTRACTOR AND LOCATED IN THE FIELD BY THE ENGINEER.

B. FAN COIL UNIT SHALL BE PROVIDED WITH HOA SWITCH. FAN SHALL BE OPERABLE LOCALLY OR VIA THE BMS.

C. SUPPLY AIR FAN SHALL START AND COOLING COIL CONTROL VALVE ACV-FCU SHALL MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE OF 75°F (ADJ) AS SENSED BY T-FCU. IF SPACE TEMPERATURE EXCEEDS 80°F (ADJ) AN ALARM SHALL BE SENT TO THE BMS.

INPUT/OUTPUT SUMMARY

POINT NO.	SYSTEM APPARATUS OR AREA POINT DESCRIPTION	INPUTS: ANALOG: MEASURED	INPUTS: ANALOG: CALC.	INPUTS: BINARY	OUTPUTS: BINARY	OUTPUTS: ANALOG	SYSTEM FEATURES: ALARMS	SYSTEM FEATURES: PROGRAMS	GENERAL
		SPEED (RPM); VOLTS; AMPS; KW; VALVE/DAMPER POSITION; TEMPERATURE; HUMIDITY; STATIC PRESSURE; DIFFERENTIAL PRESSURE; INLET TEMPERATURE; CO2; CO; EC; 4-20mA; OUTLET TEMPERATURE	ETW/PW; EWB/WB; CTH; ENTHALPY	STATUS (OFF, PASS); ON/OFF; LOW TEMP LIMIT; HIGH TEMP LIMIT; END SWITCH (OPEN POSITION)	DAMPER POSITION; VALVE POSITION	DIFFERENTIAL PRESSURE; VARIABLE SPEED; DAMPER POSITION	LOW TEMP LIMIT; HIGH TEMP LIMIT; HIGH PRESSURE LIMIT; FAULT; HIGH OR LOW LEVEL ALARM	ALTERNATE; TIME SCHEDULING; TIME DELAY START	SCHEDULE; ALARM(S); TREND INTERVAL (MIN); RUN TIME ESTIMATE; SYSTEM OVERRIDE (ON, OFF, AUTO); OVERRIDE ON GRAPHIC
1, 1a	SPLIT SYSTEM (CU-X/DSS-X)	X X X X X	X X X	X	X		X X X		X X 5 X X X
2, 3, 4	TYPICAL EXHAUST FAN SYSTEM SEQUENCE (EF-X)		X X	X	X X X			X	X X 5 X X X
5, 5a	TYPICAL FAN COIL UNIT SYSTEM SEQUENCE (FCU-X)	X X X X X	X X X	X	X		X X X		X X 5 X X X



VFR PIPING DIAGRAM
N.T.S.

GENERAL NOTES:

A. THE HEAT PUMP AIR CONDITIONING SYSTEM AND ALL SETPOINTS AND PROGRAMS SHALL BE CAPABLE OF BEING MONITORED BY THE CONTROLS USER INTERFACE. ALL CONTROLS FOR THE HEAP PUMP SYSTEM SHALL BE PERFORMED BY THE INTEGRAL FACTORY CONTROLS SYSTEM. FACTORY CONTROLS SYSTEM SHALL BE ENABLED TO BE CONTROLLED THROUGH THE INTERNET FROM A REMOTE LOCATION. CONTROL ACCESS SHALL BE PROVIDED FOR A MINIMUM OF FIVE SIMULTANEOUS USERS.

B. SCHEMATIC SHOWS TYPICAL PIPE SIZES AND COMPONENTS REQUIRED FOR INSTALLATION OF THE BASIS OF DESIGN HEAT PUMP SYSTEM (MITSUBISHI) REFRIGERANT PIPING SHALL BE SIZED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS BASED ON THE PROJECT SPECIFIC LAYOUT AND LENGTH OF REFRIGERANT PIPING. INSTALLATION AND DESIGN OF ANY SYSTEM OTHER THAN THE BASIS OF DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND/ AFTER PROJECT AQARD, BE OF NO ADDITIONAL COST TO THE OWNER.

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JACKSON COUNTY

ANIMAL RESCUE CENTER AND GREEN ENERGY PARK

DILLSBORO, NORTH CAROLINA

SHEET ISSUE:

NO.	DATE	DESCRIPTION	BY
1	09/02/2020	ISSUE FOR BID+PERMIT	RMF

PRINCIPAL IN CHARGE:
PROJECT ENGINEER:
DRAWN BY: SPR

SHEET TITLE:
MECHANICAL SCHEMATICS

SHEET NO.: M603

PROJ. NO.: 019216.00