



US Army Corps of Engineers
Huntsville Center

MARK	DESCRIPTION	DATE	APPR
A	100% PRE-FINAL DESIGN	11/06/09	
B	FINAL DESIGN FOR CONSTRUCTION	03/03/10	

DESIGNED BY: SMH	DATE: 28-JUL-2009
CHK BY: JC	CONTRACT NO.:
SUBMITTED BY: KCI TECHNOLOGIES	FILE NUMBER:
PLOT SCALE:	AS NOTED
FILE NAME:	ANSI D

U.S. ARMY CORPS OF ENGINEERS
HUNTSVILLE CENTER

15TH STREET FIRE STATION
FORT STEWART, GEORGIA

**HOT WATER
FLOW DIAGRAM**

SHEET IDENTIFICATION
M-605
SHEET 103 OF 117

3 MARCH 2010 BUILDING DESIGN FINAL DESIGN FOR CONSTRUCTION

CONTROLS LEGEND

- CT - CONTACTOR
- CO - CARBON MONOXIDE SENSOR
- M - MOTOR STARTER
- S - WALL MOUNTED SWITCH
- T - TEMPERATURE SENSOR

GENERAL NOTES

- SEE M-001 FOR GENERAL NOTES, LEGEND, AND SYMBOL LEGEND.
- ALL MECHANICAL CONSTRUCTION SHALL COMPLY WITH THE UNIFIED FACILITIES CRITERIA FOR MECHANICAL SYSTEMS.

POINT NAME	AI	AO	BI	BO	ALARM
ZONE TEMP	●				
FAN STATUS			●		
COMPRESSOR STATUS			●		
FAN START/STOP				●	
COMPRESSOR STAGE 1				●	
SCHEDULE					
HEATING SETPOINT					
COOLING SETPOINT					
HIGH ZONE TEMP					●
LOW ZONE TEMP					●
COMPRESSOR RUNTIME EXCEEDED					●
FAN FAILURE					●
FAN IN HAND					●
FAN RUNTIME EXCEEDED					●
COMPRESSOR STATUS					
TOTALS	1	0	2	2	6

AIR SOURCE HEAT PUMP (TYPICAL OF 1)
RUN CONDITIONS - SCHEDULED:
 THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

OCCUPIED MODE: THE UNIT SHALL MAINTAIN

- A 74°F (ADJ.) COOLING SETPOINT
- A 70°F (ADJ.) HEATING SETPOINT

UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN

- A 85°F (ADJ.) COOLING SETPOINT.
- A 55°F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

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

FAN:
 THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES.

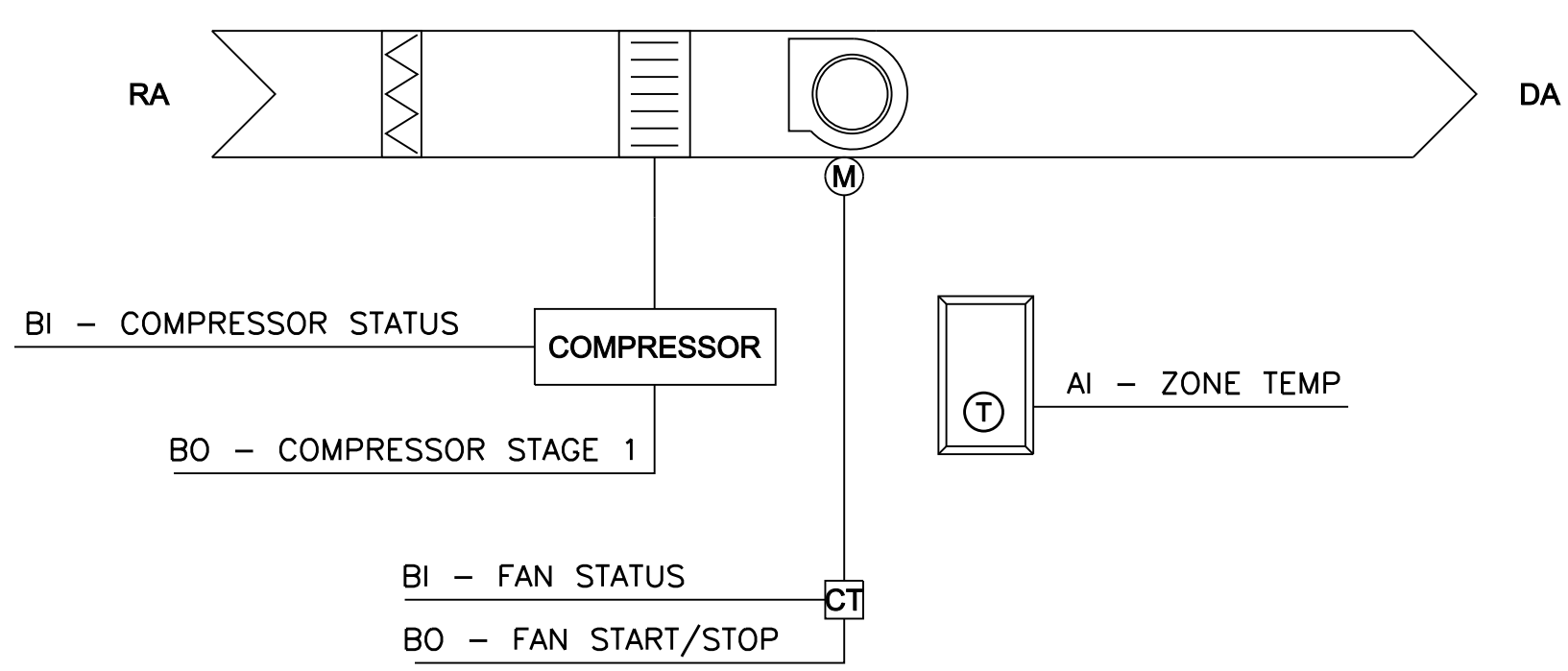
COOLING - 1 COMPRESSOR STAGE:
 THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND CYCLE THE COMPRESSOR TO MAINTAIN ITS SETPOINT. TO PREVENT SHORT CYCLING, THE STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME. THE COMPRESSOR SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS.

COMPRESSOR RUNTIME EXCEEDED: THE COMPRESSOR RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

FAN STATUS:
 THE CONTROLLER SHALL MONITOR THE FAN AND COMPRESSOR 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.).
- COMPRESSOR FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.



3 HP-1 AND DAH-1,2 CONTROLS
 M-602 SCALE : NTS

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