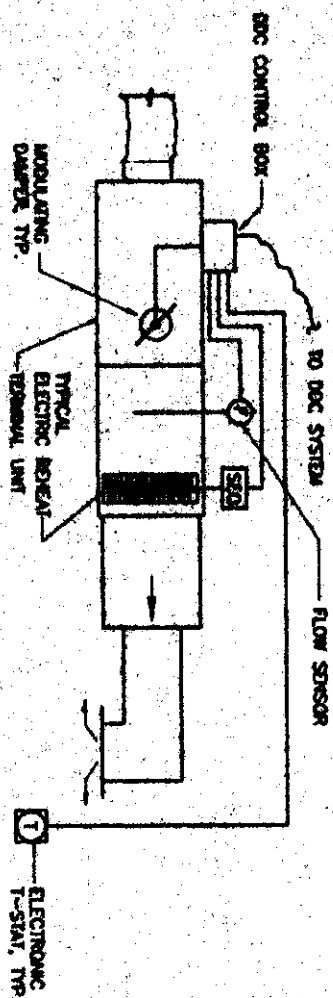


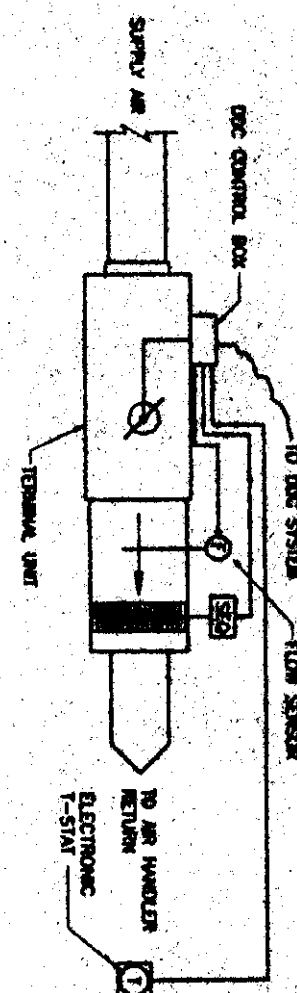
1 TYPICAL OUTSIDE AIR TERMINAL UNIT DIAGRAM (TYPE OA)  
NOT TO SCALE

- TYPICAL OUTSIDE AIR TERMINAL UNIT SEQUENCE OF OPERATION:
1. THE TERMINAL UNIT SHALL BE MANUALLY CONTROLLED BY ITS OWN DDC UNIT CONTROLLER.
  2. THE OUTSIDE AIR TERMINAL UNIT SHALL MAINTAIN A CONSTANT SUPPLY OF OUTSIDE AIR TO THE AIR HANDLER INDEPENDENT OF PRESSURE FLUCTUATIONS IN THE RETURN AIR INTAKE.
  3. THE DDC BOX SHALL COMMUNICATE THE TERMINAL UNIT DAMPER POSITION AND AIR FLOW TO THE DDC SYSTEM.



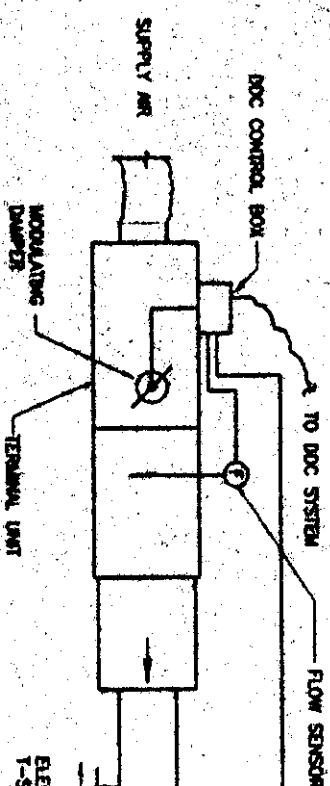
2 TYPICAL VAV TERMINAL UNIT DIAGRAM W/REHEAT (TYPE B)  
NOT TO SCALE

- TYPICAL VAV ROOM TERMINAL UNIT SEQUENCE OF OPERATION:
1. EACH TERMINAL UNIT SHALL BE MANUALLY CONTROLLED BY ITS OWN DDC VAV CONTROLLER.
  2. ON A RISE IN SPACE TEMPERATURE, THE UNIT WILL MODULATE TO OPEN THE DAMPER TO MAINTAIN THE ROOM TEMPERATURE SETPOINT. AS SPACE TEMPERATURE DECREASES, THE DAMPER SHALL MODULATE DOWN TO ITS MINIMUM POSITION. THE FLOW SENSOR SHALL ALSO MODULATE THE DAMPER TO MAINTAIN THE PROGRAM AIR FLOW FROM THE BOX WHICH CORRESPONDS TO THE LOW DUCT PRESSURE. RESOURCES OF FLUCTUATIONS IN OUTSIDE AIR DUCT PRESSURE.
  3. AT LOW LOAD CONDITIONS, THE ROOM TEMPERATURE WILL FALL BELOW THE SETPOINT. EVEN WITH THE DAMPER AT ITS MINIMUM POSITION, THE REHEAT COIL SHALL BE SET TO MAINTAIN THE ROOM TEMPERATURE AT SET POINT. THE DDC BOX SHALL COMMUNICATE THE REHEAT COIL POSITION TO THE DDC SYSTEM. IF THE SPACE LOAD INCREASES SO THAT THE SPACE TEMPERATURE RISES BACK TO THE SETPOINT, THE REHEAT COIL SHALL BE DEACTIVATED, AND THE DAMPER MODULATED TO A MORE OPEN POSITION TO MAINTAIN THE DAMPER AT ITS MINIMUM POSITION. THE REHEAT COIL SHALL BE ALLOWED TO OPERATE UNDER THE DAMPER 5 IN ITS MINIMUM POSITION.
  4. THE REHEAT COIL SHALL BE INTERLOCKED TO PREVENT IT FROM OPERATING ON NO AIR FLOW VIA AN AIR FLOW SWITCH AND ON HIGH AIR TEMPERATURE VIA A HIGH TEMPERATURE INTERLOCK.
  5. THE DDC BOX SHALL COMMUNICATE THE FOLLOWING INFORMATION TO THE DDC SYSTEM TO ALLOW THE DDC SYSTEM TO RESET THE SYSTEM SUPPLY AIR SETPOINT:
    - A. ROOM TEMPERATURE
    - B. DAMPER POSITION
    - C. HIGH ROOM TEMPERATURE
    - D. TERMINAL UNIT SHUTDOWN AND/OR EQUIPMENT FAILURE
    - E. FLOW SENSOR FAILURE



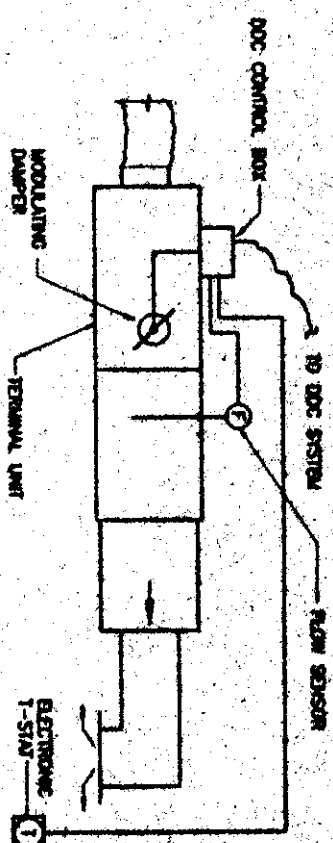
2 TYPICAL CONSTANT VOLUME TERMINAL UNIT DIAGRAM WITH REHEAT (TYPE A)  
NOT TO SCALE

- TYPICAL CONSTANT VOLUME ROOM TERMINAL UNIT WITH REHEAT SEQUENCE OF OPERATION:
1. THE TERMINAL UNIT SHALL BE MANUALLY CONTROLLED BY A DDC VAV CONTROLLER.
  2. THE CONSTANT VOLUME ROOM TERMINAL UNIT SHALL MAINTAIN A CONSTANT SUPPLY OF OUTSIDE AIR TO THE SPACE INDEPENDENT OF PRESSURE FLUCTUATIONS IN THE SYSTEM. ON AN INCREASE IN STATIC PRESSURE, THE DAMPER SHALL MODULATE TO A LESS OPEN POSITION TO MAINTAIN THE AMOUNT OF AIR SUPPLIED THROUGH THE UNIT. ON A DECREASE IN STATIC PRESSURE, THE DAMPER SHALL MODULATE TO A MORE OPEN POSITION TO MAINTAIN THE AMOUNT OF AIR SUPPLIED THROUGH THE UNIT.
  3. AT LOW LOAD CONDITIONS, THE ROOM TEMPERATURE WILL FALL BELOW THE SETPOINT. THE REHEAT COIL SHALL BE SET TO MAINTAIN THE ROOM TEMPERATURE AT SET POINT. THE DDC BOX SHALL COMMUNICATE THE REHEAT COIL POSITION TO THE DDC SYSTEM. IF THE SPACE LOAD INCREASES SO THAT THE SPACE TEMPERATURE RISES BACK TO THE SETPOINT, THE REHEAT COIL SHALL BE DEACTIVATED.
  4. THE REHEAT COIL SHALL BE INTERLOCKED TO PREVENT IT FROM OPERATING ON NO AIR FLOW VIA AN AIR FLOW SWITCH AND ON HIGH AIR TEMPERATURE VIA A HIGH TEMPERATURE INTERLOCK.
  5. THE DDC BOX SHALL COMMUNICATE THE FOLLOWING INFORMATION TO THE DDC SYSTEM TO ALLOW THE DDC SYSTEM TO RESET THE SYSTEM SUPPLY AIR SETPOINT:
    - A. ROOM TEMPERATURE
    - B. DAMPER POSITION
    - C. HIGH ROOM TEMPERATURE
    - D. TERMINAL UNIT SHUTDOWN AND/OR EQUIPMENT FAILURE
    - E. FLOW SENSOR FAILURE



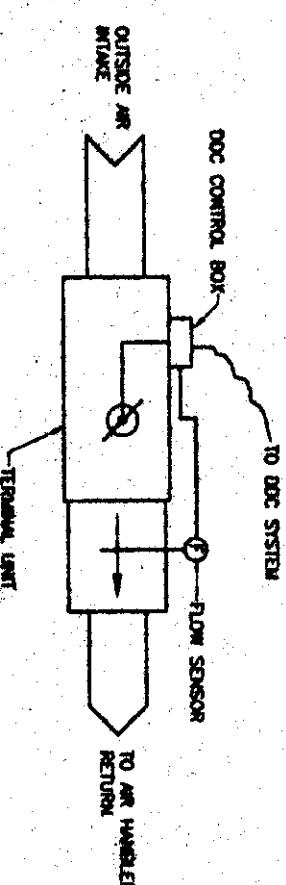
2 TYPICAL VAV TERMINAL UNIT DIAGRAM W/O REHEAT (TYPE C)  
NOT TO SCALE

- TYPICAL VAV ROOM TERMINAL UNIT WITHOUT REHEAT SEQUENCE OF OPERATION:
1. EACH TERMINAL UNIT SHALL BE MANUALLY CONTROLLED BY ITS OWN DDC VAV CONTROLLER.
  2. ON A RISE IN SPACE TEMPERATURE, THE UNIT WILL MODULATE TO OPEN THE DAMPER TO MAINTAIN THE ROOM TEMPERATURE SETPOINT. AS SPACE TEMPERATURE DECREASES, THE DAMPER SHALL MODULATE DOWN TO ITS MINIMUM POSITION. THE FLOW SENSOR SHALL MODULATE THE DAMPER TO MAINTAIN THE PROGRAM AIR FLOW FROM THE BOX WHICH CORRESPONDS TO THE LOW DUCT PRESSURE. RESOURCES OF FLUCTUATIONS IN OUTSIDE AIR DUCT PRESSURE.
  3. AT LOW LOAD CONDITIONS, THE DAMPER SHALL MODULATE DOWN TO AND REMAIN AT ITS MINIMUM POSITION.
  4. EACH TERMINAL UNIT SHALL BE INTERLOCKED TO PREVENT IT FROM OPERATING ON NO AIR FLOW VIA AN AIR FLOW SWITCH AND ON HIGH AIR TEMPERATURE VIA A HIGH TEMPERATURE INTERLOCK.
  5. THE DDC BOX SHALL COMMUNICATE THE FOLLOWING INFORMATION TO THE DDC SYSTEM TO ALLOW THE DDC SYSTEM TO RESET THE SYSTEM SUPPLY AIR SETPOINT:
    - A. ROOM TEMPERATURE
    - B. DAMPER POSITION
    - C. HIGH ROOM TEMPERATURE
    - D. TERMINAL UNIT SHUTDOWN AND/OR EQUIPMENT FAILURE
    - E. FLOW SENSOR FAILURE



2 TYPICAL CONSTANT VOLUME TERMINAL UNIT DIAGRAM W/O REHEAT (TYPE D)  
NOT TO SCALE

- TYPICAL CONSTANT VOLUME ROOM TERMINAL UNIT WITHOUT REHEAT SEQUENCE OF OPERATION:
1. THE TERMINAL UNIT SHALL BE MANUALLY CONTROLLED BY A DDC VAV CONTROLLER.
  2. THE CONSTANT VOLUME ROOM TERMINAL UNIT SHALL MAINTAIN A CONSTANT SUPPLY OF OUTSIDE AIR TO THE SPACE INDEPENDENT OF PRESSURE FLUCTUATIONS IN THE SYSTEM. ON AN INCREASE IN STATIC PRESSURE, THE DAMPER SHALL MODULATE TO A LESS OPEN POSITION TO MAINTAIN THE AMOUNT OF AIR SUPPLIED THROUGH THE UNIT. ON A DECREASE IN STATIC PRESSURE, THE DAMPER SHALL MODULATE TO A MORE OPEN POSITION TO MAINTAIN THE AMOUNT OF AIR SUPPLIED THROUGH THE UNIT.
  3. THE DDC BOX SHALL COMMUNICATE THE FOLLOWING INFORMATION TO THE DDC SYSTEM TO ALLOW THE DDC SYSTEM TO RESET THE SYSTEM SUPPLY AIR SETPOINT:
    - A. ROOM TEMPERATURE
    - B. DAMPER POSITION
    - C. HIGH ROOM TEMPERATURE
    - D. TERMINAL UNIT SHUTDOWN AND/OR EQUIPMENT FAILURE
    - E. FLOW SENSOR FAILURE



2 TYPICAL CONSTANT VOLUME EXHAUST TERMINAL UNIT DIAGRAM (TYPE E)  
NOT TO SCALE

- TYPICAL CONSTANT VOLUME EXHAUST TERMINAL UNIT SEQUENCE OF OPERATION:
1. THE TERMINAL UNIT SHALL BE MANUALLY CONTROLLED BY ITS OWN DDC VAV CONTROLLER.
  2. THE EXHAUST AIR TERMINAL UNIT SHALL MAINTAIN A CONSTANT EXHAUST AIR FLOW INDEPENDENT OF PRESSURE FLUCTUATIONS IN THE EXHAUST AIR INTAKE.
  3. THE DDC BOX SHALL COMMUNICATE THE TERMINAL UNIT DAMPER POSITION AND AIR FLOW TO THE DDC SYSTEM.

ARCHITECTS  
HAWAII

1001 Kalia Road, Suite 200  
Honolulu, Hawaii 96813  
Tel: (808) 521-1234  
Fax: (808) 521-1235



TERMINAL UNIT SEQUENCE OF OPERATION

UNIT NO.	UNIT TYPE	UNIT STATUS
30	1	OK
31	2	OK
32	3	OK
33	4	OK
34	5	OK
35	6	OK
36	7	OK
37	8	OK
38	9	OK
39	10	OK

