



VAV WITH REHEAT CO2 CONTROL DIAGRAM
 LOCATION: SEE TEC SCHEDULE
 ETVXD22 REV 17 09/26/05
 SERVES: SEE TEC SCHEDULE

INSTALLATION NOTES:

- 1 VAV BOX INSTALLED BY MECHANICAL CONTRACTOR WITH 3 TO 5 STRAIGHT DUCT DIAMETERS UPSTREAM OF BOX TO PROVIDE PROPER FLOW SENSING
- 2 TEC-1 TO BE MOUNTED IN MANUFACTURER.. SUPPLIED CONTROLLER ENCLOSURE
- 3 REFER TO BUILDING POWER TRUNK DRAWING FOR 24 VAC POWER
- 4 MOUNT ACTUATOR WITH DAMPER IN FULL OPEN POSITION. VERIFY TEC-1 AND ACTUATOR REQUIREMENT WITH THE BOX MANUFACTURER
- 5 LOCATE AS SHOWN ON FLOOR PLANS/CONTRACT DOCUMENTS
- 6 MAKE SURE TEC "AI3" DIP SWITCH IS SET FOR CURRENT FOR CO2 MONITORING.

CONTROL SCHEDULE

ROOM TEMPERATURE	CONTROL SCHEDULE		F (+C)
	F (-C)	HEATING SET POINT	
VALVE OPEN	[Graph showing valve opening during heating and closing during cooling]		
MAXIMUM AIR	[Graph showing maximum air flow during heating]		
SUPPLY AIR	[Graph showing supply air flow during heating]		
RADIATION VALVE	[Graph showing radiation valve modulation]		
REHEAT COIL VALVE	[Graph showing reheat coil valve modulation]		
MINIMUM AIR	[Graph showing minimum air flow during heating]		
VALVE CLOSED	[Graph showing valve closing during cooling]		

SEQUENCE OF OPERATION: (VAV WITH REHEAT + CO2)

THE VARIABLE VOLUME (VAV) TERMINAL UNIT IS CONTROLLED INDEPENDENT OF SYSTEM PRESSURE FLUCTUATIONS BY AN APPLICATION SPECIFIC DDC CONTROLLER USING ELECTRIC ACTUATION. THE SPACE SERVED BY THE VAV TERMINAL UNIT IS CONTROLLED IN OCCUPIED AND UNOCCUPIED MODES AS FOLLOWS:

OCCUPIED
 THE VAV TERMINAL UNIT IS CONTROLLED WITHIN USER DEFINED MAXIMUM AND MINIMUM SUPPLY AIR VOLUME SETTINGS. THE CONTROLLER MONITORS THE ROOM TEMPERATURE SENSOR AND AIR VELOCITY SENSOR AND MODULATES THE SUPPLY AIR VOLUME IN SEQUENCE WITH THE REHEAT VALVE TO MAINTAIN THE ROOM TEMPERATURE AT SET POINT. ON A CALL FOR HEATING THE SUPPLY AIR VOLUME WILL REMAIN AT MINIMUM AND THE HW REHEAT VALVE WILL MODULATE TO MAINTAIN SPACE TEMPERATURE SET POINT. WHEN THE SPACE TEMPERATURE RISES ABOVE SET POINT THE HEATING VALVE(S) WILL MODULATE CLOSED AND AIR VOLUMES WILL INCREASE TOWARDS THE BOXES MAXIMUM CFM SETTING.

UNOCCUPIED
 THE TERMINAL UNIT IS CONTROLLED USING THE NIGHT SET POINT AND/OR AIR VOLUME SETTINGS. THE CONTROLLER MAY RESET TO THE OCCUPIED MODE FOR A PREDETERMINED TIME PERIOD UPON A SIGNAL FROM THE CONTROL SYSTEM OR MANUALLY AT THE ROOM SENSOR.

THE ROOM CO2 SENSOR IS TIED BACK TO THE VAV BOX AND THROUGH PROGRAMMING THE CFM SETPOINT WILL BE INCREASED IF THE ROOMS CO2 READING RISES ABOVE ITS SETPOINT (1000 PPM ADJ.). IF DURING THIS INCREASED AIR VENTILATION MODE THE SPACE TEMPERATURE FALL BELOW SET POINT THE REHEAT VALVE WILL MODULATE OPEN TO ENSURE SPACE TEMPERATURE SET POINT IS MAINTAINED.

DISCHARGE AIR COMMISSIONING SENSOR IS INSTALLED AND USED FOR DIAGNOSTIC PURPOSES ONLY.

CS_STD_MFC_230923_VAV_REHEAT_CO2_SENSOR.dwg

DATE
9/12/10
DRAWN

REVISION
7/11/16
RLANDRUM

DETAIL NO.
XXXXXX-XX

SHEET
OF ONE