



Client:	Project Name:	Project No:	
Area:	Drawing No's:	Date:	Sheet: 1 of 3
Check Conducted By:	Signature:	Check Approved By:	Signature:

INTRODUCTION

VAV Box: (Variable Air Volume control Box)

The on-site commissioning procedure aims to check the operation of a VAV box to verify their wiring and operation.

For each point, a change of flow of the equipment should be simulated or produced, and the monitoring function of the Systems is be verified on the software online tool. For each control point, the corresponding equipment's should be controlled by the software online tool to manually command outputs to be driven to the desired value. The following procedures describe the best practice steps to commissioning each device to verify its correct operation.

It is expected that the point's lists are used to record the results of the point to point commissioning.

Procedure recommended general checks

1. Visibly check installation against approved shop drawings (size, type, model etc.)
2. Check that general construction and standard of finish is acceptable
3. Record name point information and compare against the approved specification
4. Check device is in an accessible position and correct part number has been ordered
5. Check VAV tubing is intact and filters are installed
6. Check device is wired correctly and has the correct supply voltage
7. Check temperature sensor is installed in the correct location
8. Check the temperature sensor input signal with the BMCS
9. Check temperature sensor input signals against calibrated test equipment record values/calibration on **Point to Point Sign Off Sheet** for each point
10. Disconnect the temperature sensor and check for short circuit value on BMCS to prove wiring is correct
11. Drive the damper actuator to the open position and check valve drives to fully open
12. Drive the damper actuator to the closed position and check valve drives to fully closed
13. Sign off on **Point to Point Sign Off Sheet** for each point

Procedure recommended for testing operation

Each test should be performed in both manual and automatic modes.

1. Control the VAV being monitored to run under normal operating conditions by generating the appropriate



control command. Verify the value of the VAV box against the control criteria and verify the operational performance of the equipment.

If the VAV box displays the desired value then the test has been successful and "S" should be recorded in the commissioning schedule/inspection and test plans. If the VAV box does not display the desired value then the test has failed and "F" should be recorded in the commissioning schedule/inspection and test plans.

- 2. While the VAV box displays the desired value adjust the device or equipment that the point is monitoring, e.g. increase the temperature setting on the thermostat.

If the VAV box changes its value to the expected value then the test has been successful and "S" should be recorded in the commissioning schedule/inspection and test plans. If the VAV box does not change to the expected value then this test has failed and "F" should be recorded in the commissioning schedule/inspection and test plans.

- 3. While the VAV box displays the desired value, generate an alarm (where applicable).

If the VAV box changes state from normal operating conditions to alarm condition then this test has been successful and "S" should be recorded in the commissioning schedule/inspection and test plans. If the point does not change state to alarm condition then this test has failed and "F" should be recorded in the commissioning schedule/inspection and test plans.

- 4. With the assistance of balancing technician and or mechanical technician confirm device calibration
- 5. At the conclusion of the test return the equipment and the BMCS to displaying the status, condition and desired values for normal operating conditions.

When a point is commissioned tick the Checked Out box which will indicate the user, time and date checked out, then add comments in the Checkout Notes box (Actual, Recorded, and Offset)

ACCURACY: For analogue sensor, with your certified meter take a reading at the sensor and compare to what is reading on the BMCS. Calibrate accordingly. Once the sensor calibration is verified write Reading xx Actual xx Adjust +/- xx % in the Checkout Notes.

Measured Variable	Reported Accuracy
Space Temperature	±0.5°C
Ducted Air	±0.5°C
Airflow (measuring stations)	±2.5% of full scale

REFERENCE STANDARDS

CIBSE Commissioning Code C – Automatic Controls



CHECKLIST

Generic Analogue Input Testing				
BMCS Drawing Number				
	ITEM	VERIFICATION METHOD	RESULT	RESULT
1	Visibly check installation against approved shop drawings (size, type, model etc.)	Site Inspection		
2	Check that general construction and standard of finish is acceptable	Site Inspection		
3	Record name point information and compare against the approved specification	Site Inspection		
4	Check device is in an accessible position and correct part number has been ordered	Site Inspection		
5	Check VAV tubing is intact and filters are installed	Site Inspection		
6	Check device is wired correctly and has the correct supply voltage	Site Inspection		
7	Check temperature sensor is installed in the correct location	Site Inspection		
8	Check the temperature sensor input signal with the BMCS	Site Inspection		
9	Disconnect the temperature sensor and check for short circuit value on BMCS to prove wiring is correct			
10	Check temperature sensor input signals against calibrated test equipment record values/calibration on Point to Point Sign Off Sheet for each point	Site Inspection		
11	Drive the damper actuator to the open position and check valve drives to fully open	Data / Point Sheet Record		
12	Drive the damper actuator to the closed position and check valve drives to fully closed	Data / Point Sheet Record		
13	Confirm correct calibration of device (with balancing technician and or mechanical technician)	Data / Point Sheet Record		
Certified By Sub Contractor (initial):				
Date:				
Confirmed By (Head Contractor / Client) (initial):				
Date:				