|  |  |
| --- | --- |
| FT: | **23 81 26-1** |
| **ITEM:** | **Split-System Air Conditioners** |
| **ID:** |  |
| **AREA SERVED:** |  |

Form Filled Out By:

|  |  |  |
| --- | --- | --- |
|  | **Name & Company** | **Date** |
| GC |  |  |
| MC |  |  |
| EC |  |  |
| BC |  |  |
| CC |  |  |
| OR |  |  |
| A/E |  |  |
| CA |  |  |

GC = General Contractor; MC = Mechanical Contractor; EC = Electrical Contractor; BC = Balancing Contractor; CC = Controls Contractor; OR = Owner Representative; A/E = Architect/Engineer; CA = Commissioning Agent

XX = No Initials Required

# TEST PREREQUISITES

The following items have been completed and the equipment is ready for Functional Testing.

Check if OK. Enter note number if deficient.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Item | **GC** | **MC** | **EC** | **BC** | **CC** | **OR** | **A/E** | **CA** |
| Unit startup completed | XX |  | XX | XX | XX |  |  |  |
| Start-up report submitted | XX |  | XX | XX | XX |  |  |  |
| Test and Balance (TAB) completed | XX |  | XX |  | XX |  |  |  |
| SOO programmed | XX |  | XX | XX |  |  |  |  |
| Prefuctional Checklist completed | XX |  | XX | XX | XX |  |  |  |

# SENSOR CALIBRATION VERIFICATIONS (if applicable)

* Check a representative sample of sensors for calibration and adequate location.
* Test the packaged controls and BAS readings.
* Use the same test instruments as used for the original calibration, if possible.
* Verify that the sensor reading (via the permanent thermostat, gage, packaged control panel or building automation system (BAS)) compared to the test instrument-measured value is within the tolerances specified in the contract requirements. (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).
  + "In calibration" means making a reading with a calibrated test instrument within 6 inches of the site sensor.
  + For items out of calibration or adjustment, fix now if easy, via an offset in the BAS, calibration or replacement of sensor.

| **Sensor &**  **Location** | **Location OK1** | **1st Gage / Pkg**  **& BAS Value** | **Test Inst**  **Value** | **Final Gage / Pkg**  **& BAS Value** | **Pass**  **Y/N?** |
| --- | --- | --- | --- | --- | --- |
|  |  | Pkg:  BAS: |  | Pkg:  BAS: |  |
|  |  | Pkg:  BAS: |  | Pkg:  BAS: |  |
|  |  | Pkg:  BAS: |  | Pkg:  BAS: |  |
|  |  | Pkg:  BAS: |  | Pkg:  BAS: |  |
|  |  | Pkg:  BAS |  | Pkg:  BAS |  |

1Sensor location is appropriate and away from causes of erratic operation.

# DEVICE CALIBRATION VERIFICATIONS (if applicable)

* Check a representative sample of actuators and devices for calibration and adequate operation.
  + "In calibration" means observing a readout in the BAS and going to the actuator or controlled device and verifying that the BAS reading is correct.
  + For items out of calibration or adjustment, fix now if easy, via an offset in the BAS, or a mechanical fix.

| **Device / Actuator &**  **Location** | **Procedure** | **1st BAS**  **Value** | **Site**  **Observation** | **Final BAS**  **Value** | **Pass**  **Y/N?** |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
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# FUNCTIONAL PERFORMANCE VERIFICATIONS

**Demonstrate operation of equipment per Contract Documents including the following:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sequence of Operations Checks:** | |  |  |  |  | | |  |
| The following is a step by step test to verify the system follows the design sequence of operation. The test procedure column indicates what adjustments are needed for testing. Each step is either pass or fail. | | | | | | | | |
| **Step** | **Test Procedure** | | | | | **Pass/Fail** | | |
| **Functional Test** | | | | | | | | |
| 1 | Record the following initial test conditions while the unit is enabled by schedule. | | | | | |  | | |
| 2 | OSA damper position\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | |  | | |
| 3 | Zone Temperature\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | |  | | |
| 4 | Discharge Temperature\_\_\_\_\_\_\_\_\_\_\_ | | | | | |  | | |
| 5 | Cooling / Heating Status\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | |  | | |
| 6 | Fan Speed\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | |  | | |
| 7 | Demonstrate the upper and lower limits for setpoint adjustment for the room Temp and record: Upper\_\_\_\_ Lower\_\_\_\_ | | | | | |  | | |
| 8 | Adjust room T-stat up to Max allowable temperature setpoint\_\_\_\_\_\_ | | | | | |  | | |
| 9 | Compressor cycles off | | | | | |  | | |
| 10 | Fan stops | | | | | |  | | |
| 11 | OSA damper is closed when unit is off? | | | | | |  | | |
| 12 | Adjust room T-stat down to restart unit in cooling mode. Allow (5) minutes for compressor short cycle protection to elapse | | | | | |  | | |
| 13 | Fan starts, compressor cycles on | | | | | |  | | |
| 14 | OSA damper open to minimum position? | | | | | |  | | |
| 15 | Leaving air temperature drops below room temperature | | | | | |  | | |
| 16 | Operate long enough for evaporator to produce condensate. | | | | | |  | | |
| 17 | Condensate pump cycles on to remove condensate. | | | | | |  | | |
| 18 | Condensate drains properly. | | | | | |  | | |
| 19 | Manually trip the condensate switch or onboard pump to disable the unit | | | | | |  | | |
| 20 | Unit shuts down | | | | | |  | | |
| 21 | Alarm is reported locally? | | | | | |  | | |
| 22 | Reset Condensate wet switch | | | | | |  | | |
| 23 | Alarm clears at unit | | | | | |  | | |
| 24 | Unit restarts automatically | | | | | |  | | |
| 25 | Adjust room T-stat to place unit in heating mode. | | | | | |  | | |
| 26 | Compressor/reversing valve operates | | | | | |  | | |
| 27 | Leaving air temperature increases above room temperature Record LAT\_\_\_\_\_ | | | | | |  | | |
| 28 | Release all overrides. | | | | | |  | | |
| 29 | Shut unit down at the disconnect switch | | | | | |  | | |
| 30 | Unit shuts down completely | | | | | |  | | |
| 31 | Alarm? | | | | | |  | | |
| 32 | Re-power the unit at the disconnect | | | | | |  | | |
| 33 | Alarms are cleared | | | | | |  | | |
| 34 | System returned to normal mode | | | | | |  | | |
| 35 | Remove any previously forced conditions to equipment at workstation | | | | | |  | | |

# OUTSTANDING ITEMS

Note outstanding items in table below. Use numbers referenced above.

|  |  |  |
| --- | --- | --- |
| Resolved (Initial / Date) | **Note** | Description |
|  | **1.** |  |
|  | **2.** |  |
|  | **3.** |  |
|  | **4.** |  |
|  | **5.** |  |
|  | **6.** |  |
|  | **7.** |  |
|  | **8.** |  |
|  | **9.** |  |
|  | **10.** |  |

# FIELD NOTES

Fill in as appropriate.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |

# SIGN OFF

System / Equipment has been installed in accordance with the Contract Documents and is ready for Owner acceptance.

|  |  |  |
| --- | --- | --- |
|  | **Signature** | **Date** |
| **Contractor’s Representative** |  |  |
| **A /E Representative** |  |  |
| **Commissioning Agent** |  |  |
| **Owner’s Representative** |  |  |

## END OF TEST