

Appendix R - HVAC Quality Checklist

Rooftop Unit Checklist		
Quality Assurance Category	Task	Result
Installation Checklist IC/TAB Vendor	Verify all required equipment has been replaced per TA and BOM.	Pass/Fail
	Units are labelled correctly.	Pass/Fail
	Asset tag installed	Pass/Fail
	Fan rotation is correct	Pass/Fail
	Pulleys are correctly aligned and sheave pin is in place.	Pass/Fail
	Roof is clear of debris.	Pass/Fail
	Condensate and gas piping is properly supported.	Pass/Fail
	Access doors close tightly with no leaks	Pass/Fail
	Cabinet and general installation is complete.	Pass/Fail
	Unit is secure to curb and level horizontally and vertically.	Pass/Fail
	Maintenance access for all unit access panels is acceptable and panels open freely.	Pass/Fail
	Disconnect switch is installed in accessible location near or on unit.	Pass/Fail
	Electrical connections are tight with sealtight around any unit penetrations.	Pass/Fail
	All dampers close tightly.	Pass/Fail
	Verify overcurrent protection is HACR type, installed and sized correctly and labeled in panel.	Pass/Fail
	Cabinet and coils are not damaged and in like new condition.	Pass/Fail
	Maintenance electrical outlet is installed and functional.	Pass/Fail
	Inside of unit is clean and clear of debris.	Pass/Fail
	Costguard is installed per scope of work and piping unions are cemented.	Pass/Fail
	Validate condensate is piped to splash block, draining, or roof drain per code requirements	Pass/Fail
	Verify filters are installed, clean and of proper size. Verify there is no air by-pass around filters.	Pass/Fail
	Curb is sealed with no air leakage.	Pass/Fail
	Main distribution panel is labeled correctly.	Pass/Fail
	Unit ground wire is secured.	Pass/Fail
Electrical wiring is complete with no visible damage	Pass/Fail	
Start-up Controls Programming IC/TAB Vendor	Manufacturer Start-up Form is complete and values are acceptable.	Pass/Fail
	Programming: SE 3.3, 3.4, 4.0	
	Commission-Standard-Tstat-Only: Tstat = "Yes" or Space Sensor = "No"	Pass/Fail
	Controller-Network-Address: RTU number + 3	Pass/Fail
	Controller-Network-FCBusMode = Wired Field Bus	Pass/Fail
	Controller-Network-BaudRate = Auto	Pass/Fail
	Controller-Network-Device ID = RTU number + 3	Pass/Fail
	Details-Occ-OffDurUnocc = No	Pass/Fail
	Details-Clg-Setup-Clg-En = Yes	Pass/Fail
	Details-Clg-Setup-ClgAdapTunEn = Yes	Pass/Fail
	Details-Htg-Setup-Htg-En = Yes	Pass/Fail
	Details-Ht-Setup-#HtgStgs = 2 Stages	Pass/Fail
	Details-Htg-Setup-HtgAdapTunEn = Yes	Pass/Fail
	Details-Htg-Setup-#GasVlvs = 1 (Set to 0 for Hp and Elect Heat)	Pass/Fail
	Details-Fan-Setup-Fan Ctl-Type = No VFD select "Single Speed", W/VFD select "Fixed Variable"	Pass/Fail
	Details-Fan-Setup-FanOnOcc = Yes	Pass/Fail
	Details-Fan-Setup-FanOnDlyHeat = 30s (Set to 0 for HP or Electric Heat)	Pass/Fail
	Details-Fan-Setup-FanOnly-%Cmd = 50%	Pass/Fail
	Details-Fan-Setup-1ClgStg-%Cmd = 70%	Pass/Fail
	Details-Fan-Setup-2ClgStg-%Cmd = 100% (2stage Unit) or 80% (3 and 4 stage)	Pass/Fail
	Details-Fan-Setup-3ClStg-%Cmd = 100% (3 stage unit) or 90% (4 stage)	Pass/Fail
	Details-Fan-Setup-4ClStg-%Cmd = 100% (4 Stage unit)	Pass/Fail
	Details-Fan-Setup-1HtgStg-%Cmd = 100%	Pass/Fail
	Details-Fan-Setup-2HtgStg-%Cmd = 100%	Pass/Fail
	Details-Econ-Setup-Econ-En = Yes	Pass/Fail
	Details-Econ-Setup-Econ-MinPos = Set to minimum outside air requirements	Pass/Fail
	Details-Econ-Setup-LowSpdFan-MinPos = Set minimum 1% above EconMinPos	Pass/Fail
	Details-Econ-Setup-FreeClg-Sel = Single Enthalpy	Pass/Fail
	Details-Econ-Setup-EconOAEth-Sp 4= 24 Btu/lb	Pass/Fail
	Details-Econ-Setup-Dvent-Mode = Enable	Pass/Fail
	Details-Econ-Setup-DventMaxEconPos = 50%	Pass/Fail
	Details-Econ-Setup-DventIAP-Sp = 1000	Pass/Fail
	Details-Econ-Setup-EconFltDetectEn = Enable	Pass/Fail
	Non ZR Units	
	Details-HGR-Setup-HGR-En = No	Pass/Fail
	Details-HGR-Setup-HGRAlt-En = No	Pass/Fail
	Details - HGR-Setup-HGRUnocc-En = No	Pass/Fail
	Details-HGR-Setup-Mode = No	Pass/Fail
	ZR Units - Reheat Units	
	Details-HGR-Setup-HGR-En = Yes	Pass/Fail
Details-HGR-Setup-HGRAlt-En = Yes	Pass/Fail	

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Start-up Controls Programming IC/TAB Vendor (cont.)	Details - HGR-Setup-HGRUnocc-En = Yes	Pass/Fail
	Details-HGR-Setup-Mode = No	Pass/Fail
TAB Checklist TAB Vendor	Outside air damper set to minimum air flow requirement and damper position marked.	Pass/Fail
	Supply, return, and outside air volumes meet design tolerances.	Pass/Fail
	Space diffuser airflow meet tolerances.	Pass/Fail
	Store pressure meets tolerances.	Pass/Fail
	Outside air and return air dampers modulate freely.	Pass/Fail
	Start-up report is reviewed and all information if filled out. All required measurements are within typical ranges. (If Applicable) VFD is set-up and operational.	Pass/Fail
	Verify amp draw of VFD is within unit specification, not operating in overramped condition.	Pass/Fail
EMS/Sensor Validation TAB Vendor	RTU supply air temp sensor location located per start-up binder.	Pass/Fail
	RTU return air temp sensor location located per start-up binder.	Pass/Fail
	RTU return air smoke detector (when applicable) is located per start-up binder.	Pass/Fail/NA
	Space temperature sensor has been replaced and location meets requirements.	Pass/Fail
	Space humidity sensor has been replaced and location meets requirements.	Pass/Fail
	Unit is being controlled by a space temperature sensor or thermostat	Pass/Fail
	EMS has been connected and validated with TOC or Gridpoint. Screen shot is available.	Pass/Fail/NA
	No splicing of EMS/Sensor/Thermostat wiring is visible	Pass/Fail
	(If Applicable) 2 Stage Thermostat to SE Board Control Wiring meets detail in start-up binder.	Pass/Fail/NA
	(If Applicable) 2 Stage Thermostat to 4 Stage Unit meets detail in start-up binder.	Pass/Fail/NA
(If Applicable) 4 Stage Thermostat to 4 Stage Unit meets detail in start-up binder.	Pass/Fail/NA	
(If Applicable) 3 Stage Thermostat wiring meets detail in start-up binder.	Pass/Fail/NA	
(If Applicable) 3 Stage Thermostat with Humidity sensor wiring meets detail in start-up binder.	Pass/Fail/NA	
(If Applicable) EH Thermostat with SCR control wiring meets detail in start-up binder.	Pass/Fail/NA	
Cooling Functional Test TAB Vendor	Overwrite the thermostat or sensor to put the unit into cooling mode.	
	Compressors enable.	Pass/Fail
	If fan has VFD, the fan increases speed.	Pass/Fail
	Document the discharge air temperature.	Value
	After 10 minutes, Discharge air temperature is below 55 degrees.	Pass/Fail
Cooling mode is operational	Pass/Fail	
Heating Functional Test TAB Vendor	Overwrite the thermostat or sensor to put the unit into heating mode.	
	Heat exchanger enables.	Pass/Fail
	If fan has VFD, the fan increases speed.	Pass/Fail
	Document the discharge air temperature.	Value
	After 10 minutes, Discharge air temperature is above 85 degrees.	Pass/Fail
Heating mode is operational	Pass/Fail	
Dehumidification Functional Test TAB Vendor	Overwrite the humidistat to put the unit into dehumidification mode.	
	Compressors enable.	Pass/Fail
	Hot Gas REheat Valve opens	Pass/Fail
	If fan has VFD, the fan increases speed.	Pass/Fail
	Document the discharge air temperature.	Value
Dehumidification Mode is operational.	Pass/Fail/NA	
Economizer Functional Test TAB Vendor	Overwrite the humidistat to put the unit into economizer mode.	
	Economizer modulates from minium position to 100% open.	Pass/Fail/NA