COMMISSIONING FORM – COMMERCIAL AC SYSTEMS (v. 2)

Note: To Fully Complete this Form Requires the Outside Air Temperature to be 60 F or Above Unless A Lower Temp is Allowed by OEM

Customer Name: (please print)	Customer Signature:	Date:
Address:	Permit #:	
Company Performing Commissioning:		
Technician Name: (please print)	Technician Signature:	
Building Type (i.e. office, retail, etc):		

Load Calculations

How Were Heating and Cooling Loads Determined? ☐ Manual N ☐ Other (describe): _____

Heating Btu/hr | Cooling, Sensible Btu/hr | Cooling, Latent Btu/hr

Customer and/or Contractor Comments Related to Sizing:

General Information

Manufacturer:	Model # (For Split System, Include Air Handler, Indoor Coil, and Outdoor Coil Model Numbers):
Compressor FLA / RLA:	
Unit Cooling Capacity in Tons:	Factory Rated TESP on High Speed (IWC):
Location (i.e. roof):	Altitude Above Sea Level:

Airflow Performance

Method Used to Measure Airflow CFM: ☐ Flow Grid ☐ Duct Traverse ☐ RTU Programmed On-Board DDC
☐ Tachometer & Total Static Pressure Plotted on Fan Curve
☐ Manometer Reading Compared to OEM CFM & Pressure Drop Coil Table

Indicated CFM:	Volumetric CFM (ACFM) (Note: correction factor depends on measurement strategy):

Volumetric CFM within ± 15% Required by System Design? ☐ Yes ☐ No

Measured Supply Air ESP on High Speed (IWC):	Measured Return Air ESP on High Speed (IWC):
Total Measured ESP (TESP):	TESP Within OEM Limit? ☐ Yes ☐ No

Fan Motor Amperage:

Outside Air

Design Minimum OA Based On: ☐ ASHRAE 62.1 ☐ Other (specify here): Design OA CFM: _____ CFM

How was Fresh OA Volume Measured? ☐ Flow Grid ☐ Multi-Point Velocity Recordings & OA Damper Net Free Area Method
☐ Programmed DDC Setting ☐ N/A (i.e. Split System) ☐ Other (explain): _____
☐ Mixed Air Temperature Method: _____ (only use if return air humidity is low)

Indicated CFM:	Volumetric CFM (ACFM) (Note: correction factor depends on measurement strategy):

Relief or Exhaust Damper Set Properly to Correct OA? CFM Volume? ☐ Yes ☐ No ☐ N/A

Confirmed Fresh Air Intake and Relief Dampers Close During Normal & Emergency Shutdown? ☐ Yes ☐ No

If VAV, Have You Confirmed Proper Operation of Supply Fan and OA Percentage Amounts as VAV Modulates? ☐ Yes ☐ No ☐ N/A

Air Conditioning Performance

Indoor Wet Bulb Temp:	Indoor Dry Bulb Temp:	Outdoor Dry Bulb Temp:

Expansion Valve Type: ☐ TXV ☐ Fixed Orifice ☐ Other (describe): _____

List Each Compressor's Factory Rated Subcooling (TXV only, skip this section if Fixed Orifice) and Field Measured Subcooling Temperatures:
Compressor #1 Factory Rated _____ F, Measured _____ F Compressor #2 Factory Rated _____ F, Measured _____ F
Compressor #3 Factory Rated _____ F, Measured _____ F Compressor #4 Factory Rated _____ F, Measured _____ F

Is Measured Subcooling within + or - 3 F of Stated OEM Requirement? ☐ Yes ☐ No

Compressor Factory Rated Superheat _____ F	Measured Superheat 1: _____ F 2: _____ F 3: _____ F 4: _____ F

Is Measured Superheat within + or - 5 F of Stated OEM Requirement? ☐ Yes ☐ No

Note: Subcooling Measurement at or Above 60 Degrees F is Required Unless Otherwise Stated by Manufacturer

Controls

Control Type: ☐ BAS ☐ Manual Thermostat ☐ Programmable Thermostat

Temperature Set Points: Heating – Occupied / Unoccupied _____F / _____ F Cooling -- Occupied / Unoccupied _____F /_____ F

Fan Setting: ☐ On ☐ Auto

Economizer Installed by Manufacturer? ☐ Yes ☐ No	Thermostat Configured for Economizer? ☐ Yes ☐ No

Economizer Operation Controlled by: ☐ Differential Enthalpy ☐ Differential Dry Bulb ☐ Fixed Dry Bulb ☐ Other (specify):_____

Economizer Maximum Open Temperature (Closeout/Changeover Temperature): _____ F

Was ACCA Standard 5 Section 4.7 - System Controls Procedure (Back Page) Followed, Including Verifying the Control System is Compatible with the System, Proper Operation, Correct Cycling, and Safety Systems Tested (Dampers Close in the Event of a Fire, etc.)? ☐ Yes ☐ No

Building Owner / Representative Training

Did the Building Owner/Representative Receive Training on How to Operate the New System? ☐ Yes ☐ No

Were Pertinent Manuals Given to Building Owner or Placed in or Near Equipment for Others to Use? ☐ Yes ☐ No

Technician Comments

Example ASHRAE 62.1 Ventilation Rates

Use Type	CFM/Person	Plus CFM/SF
Retail	7.5	0.12
Grocery	7.5	0.06
Office	5.0	0.06
School	10.0	0.12
Warehouse	10.0	0.06
Assembly	5.0	0.06
Common Areas	0.0	0.06
Restaurant (dining)	7.5	0.18

Abbreviations:

- **AC** – Air Conditioning
- **ACCA** – Air Conditioning Contractors of America
- **ACFM** – Actual (volumetric) CFM. The same mass of air wil occupy a larger volume at altitude where air is less dense. Most measurement strategies require a "correction" to go from measured to ACFM.
- **BAS** – Building Automation System
- **CFM** – Cubic Feet (of air) per Minute
- **ESP** – External Static Pressure
- **F** – Degrees Farenheit
- **FLA** – Full-Load Amps (Amperes)
- **IWC** – Inches Water Column (a measure of pressure)
- **OA** – Outside Air
- **OEM** – Original Equipment Manufacturer
- **RLA** – Rated Load Amps (of a compressor)
- **RTU** – Roof Top Unit
- **TESP** – Total External Static Pressure (the difference between the positive supply pressure and negative return pressure)
- **TXV** – Thermal Expansion Valve
- **SF** – Square Foot
- **VAV** – Variable Air Volume

ACCA Standard 5 Section 4.7 – System Controls

The contractor shall ensure proper selection and functioning of system operational and safety controls.

4.7.1 REQUIREMENTS

The contractor shall ensure:

a) Operating controls and safety controls are compatible with the system type and application, and the selected controls are consistent with OEM recommendations and industry practices

and

b) Operating controls and safety controls lead to proper sequencing of equipment functions, with all controls and safeties functioning per OEM ore customer design specifications

NOTE OPERATING CONTROLS:

Examples of operating controls include: thermostats, humidistats, economizer controls, etc. Examples of safety controls include: temperature limit switch, airflow switch, condensate overflow switch, furnace limit switch, boiler limit switch, etc.

4.7.2 ACCEPTABLE PROCEDURES

The contractor shall use the following acceptable procedures for fulfilling the desired design criteria:

a) Confirmation of the control/safety selections made

and

b) Supporting OEM literature related to the selections made

and

c) Verification of correct cycling/operational sequences of controls and safety devices/systems per system design and OEM specifications

4.7.3 ACCEPTABLE DOCUMENTAION

The contractor shall provide evidence of the following:

a) Documents showing that controls/safeties selections are in compliance with OEM specifications

and

b) Written job documentation or checklist in the installation file indicating that controls/safeties function properly