



Fundamentals of HVAC

Controls Specs and Points Lists



What you will Learn in this Lesson

- How Controls Specs are put together
- The definitions of the various terms used in controls
- What information is on generic points lists
- The differences between equipment controls and BAS

How Controls Specs are put together

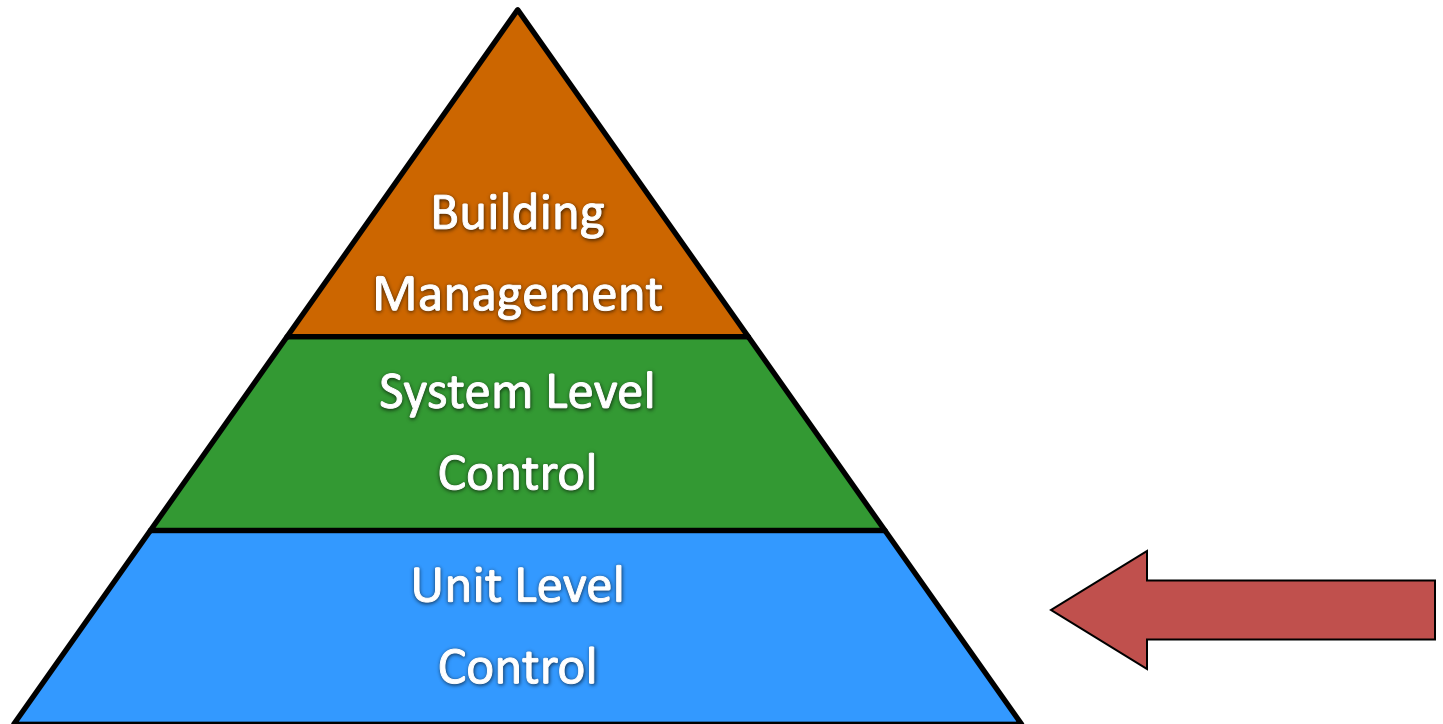
- Usual 3-Part Specs
- Components of a Typical Controls Spec

What is a Point?

- “Points” in terms of temperature controls is one of the following:
 - Analog input
 - Analog output
 - Digital input
 - Digital output

Where are the points?

Unit Controller Level



Points List

- Analog Input Points
 - Temperature
 - RH
 - Static Pressure
 - Flow
 - Current (or watts)
- Analog Output Points
 - Valve Modulation
 - Damper Modulation
 - VFD Modulation
 - Setpoint Adjustment
- Digital Input Points
 - Temperature Switch
 - Pressure Switch
 - Flow Switch
 - End Switch
 - Current Switch
 - Auxiliary Contact
 - Float Switch
 - Smoke Detector
 - Freeze Stat
- Digital Output Points
 - Start/Stop
 - Open/Close
 - High/Low
 - Alarms
 - High Analog
 - Low Analog
 - High digital
 - Low digital

BAS vs Equipment Controls

- Watch out for specs that confuse these two
- BAS are a custom engineered controls system
- Equipment Controls are fixed generic systems
- Avoid specs that require custom equipment controls
- Compare the two points lists

End of Lesson

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