255000 Integrated Automation Facility Controls

Sections Included In This Standard:

1.1 Pneumatic Control Systems
1.2 Electric Control Devices
1.3 Control System Locations

1.1 PNEUMATIC CONTROL SYSTEMS

A. Control Air Compressors:

1. All installations shall have a redundant source of control air to allow for maintenance and outage of either source. The sources of control air shall be completely independent back to the breaker panel.

2. Where available, campus compressed air system may be used as a primary source. Provide a shut-off valve inside and within for maintenance service.

3. The compressed air system shall be monitored by the BAS. The moisture content (dew point sensor) of the 20 PSIG air shall be monitored with high alarm notification. Means of monitoring shall be via pressure switch installed at the 20 PSIG regulated side.

4. Control air compressors shall have the following features:

   a) External, disposable, cartridge-type oil filter.

   b) Positive pressure lubrication system.

   c) Load less starting.

   d) Automatic purge piped to drain.

5. Acceptable Manufacturer: Quincy.

B. Compressed Air Dryer:

1) All control air systems shall include a dryer. Chilled Water Dryers are acceptable.

2) Acceptable Manufacturer: Hankison, models 8010, 8015, 8025.

3) Dryer operational status shall be monitored by BAS.

C. Pneumatic air tubing:

1) Hard copper or polyethylene tubing is acceptable.

2) Copper tubing shall be the hard-drawn seamless type. Polyethylene tubing shall be type FR plenum rated.

3) All exposed areas: Shall be exposed hard copper or polyethylene tubing in conduit.

4) Enclosed areas (above ceiling): Shall be hard copper or polyethylene tubing. Poly tubing located above ceiling shall be bundled with plastic ties and supported as required (e.g. J-Hooks). Copper and poly tubing shall be labeled at both ends of termination.

5) Enclosed areas (behind walls above hard ceiling): When poly tubing is used, 3/4" conduit or larger shall be installed from wall box to above finished ceiling and turned out with long radius 90 degree fitting.

1.2 ELECTRIC CONTROL DEVICES

1. Sensors: When electronic sensors are installed on HVAC equipment and piping; analog gauges, test well or taps shall be installed along with the sensors, for calibration and validation.

2. Duct temperature measurement shall be by averaging elements for ducts larger than 2 feet (measured at the largest dimension).

3. Low limit protection devices shall be installed on all air-handling units.

4. High pressure safety devices shall be installed on all air handling units containing any device that could potentially block air flow at the fan (e.g. discharge smoke damper).

5. Current relay technology shall be used for all equipment status indication with the exception of packaged equipment, which must be monitored at the equipment main interface panel. Analog Current sensors are required for trending purposes.

1.3 CONTROL SYSTEMS LOCATION

A. GENERAL

1. Refer to the "UF Control Systems Guide Specifications" standards document for guidelines and requirements of control system operational requirements. Refer to the link(s) below for the Word and PDF versions of the Control Guide Specification:

a) http://www.ppd.ufl.edu/word/ControlSystems-Guide.doc
b) http://www.ppd.ufl.edu/pdf/ControlsSystems-Guide.pdf

B. EQUIPMENT

1. All BAS/DDC control panels shall be in a mechanical/electrical space with ample room for trouble-shooting, servicing, repairing and replacing.

2. The conditioned space housing BAS/DDC control panels must be maintain between 60F to 80F temperature range at all times.

3. BAS/DDC control panels are not permitted outside.

4. Any variance from above items #1 or #2 requires an approval from the appropriate Facilities or Project Manager.

END OF SECTION