



Design Standard Instrumentation and Control for HVAC

Purpose:

This design standard has the purpose of creating a consistent application of Instrumentation and Control for HVAC requirements throughout the South San Francisco Unified School District thereby achieving a standard of quality for maintenance, energy efficiency, and reliability throughout all renovation and new building projects.

Design Standard:

- Furnish an Alerton Envision for BACtalk native BACnet-based system to control all new HVAC and lighting equipment associated with this project in accordance with SSFUSD's current Energy Management System (EMS) Alerton standard. The operator's workstation, all building controllers, network integration devices, application controllers, and all input/output devices shall communicate using the protocols and network standards as defined by ANSI/ASHRAE Standard 135–2001, BACnet. Specifically, all new workstations and new controllers for the new equipment, including unitary controllers, shall be native BACnet devices. The work in general consists of, but is not limited to, the following:
 - The native BACnet EMS shall consist of a high-speed, peer-to-peer local area network of DDC controllers connected to a dedicated Server PC and other client workstation PC's and Lap Top computers. The various PC graphical user interfaces allow users to interface with the EMS network via dynamic color graphics. All HVAC and Electrical system points monitored and controlled by the EMS, the building floor plans, as well as all control devices will be depicted by point-and-click graphics.
 - All devices in this project facility location, as well as all other existing system points at other owner-facility locations, shall be accessible from a single graphical user interface.
 - Furnish and install all local area integration network communication interface wiring between systems that are directly monitored and controlled, and/or integrated, with the EMS network.
 - Furnish and install a network of stand alone Direct Digital Control (DDC) controllers and field panels, including sensors, and control devices. Provide all necessary BACnet-compliant hardware as required by manufacturer. All controller devices must be BTL tested and listed by an official BACnet



South San Francisco Unified School District



Section 23 09 00

Version 1, 2011.9.30

Testing Laboratory and have the BTL mark issued.

- o Furnish and install the required software to produce a complete and operational native BACnet EMS.
- o Provide system commissioning and acceptance tests as required.
- o Provide warranty of the EMS system including all associated materials, labor, and services for a period of one year from the date of final acceptance.
- o Coordinate All devices, sensors, actuators and valves referenced elsewhere in these standards with EMS manufacturer's requirements.

Approved Manufacturers:

- Alerton, Contact Jennifer Rose at Syserco: 510.498.1470 or e-mail: j.rose@syserco.com

Substitutes Allowed:

- No substitutions

Associated Design Standards

- Division 1 Codes & Standards
- 22 05 23 General Duty Valves for Plumbing and HVAC
- 23 00 00 Basic HVAC System Design
- 23 05 93 Testing Adjusting and Balancing

End of Document