

Design Standard

Direct Digital Control System for HVAC

Revisions Log:

Version	Date	Description of changes/updates
2	August 30, 2015	<ul style="list-style-type: none">Clarified temperature program requirements.Added cooling and heating set points.

Purpose:

This design standard has the purpose of creating a consistent application of HVAC controls throughout the East Side Union High School District, therefore achieving a standard of quality for maintenance, energy efficiency, and reliability throughout all renovation and new building projects.

ESUHSD controls HVAC equipment either locally, or centrally through an enterprise level DDC EMS. This design standard provides information about the specific applications, thermostats, sensors, and program requirements for direct digital control.

Design Standard:

1. Application

- a. Provide direct digital controls and monitoring for HVAC equipment in “orphan” and “community” spaces. These spaces do not typically have a single adult providing consistent and continuous supervision of the space (as is the condition for dedicated offices, classrooms). The spaces without consistent and continuous adult supervision include but are not limited to:
 - Gymnasiums
 - Theaters
 - Student Unions / Commons / Centers
 - Auditoriums / Multi-purpose Rooms / Lecture Halls
 - Lobbies
 - Cafeterias
 - Locker Rooms
 - Libraries
 - Open office areas

- b. Provide DDC EMS monitoring only for critical facilities requiring remote supervision, including but not limited to:
 - Temperature monitoring in MPOE, MDF, IDF rooms
 - High water monitoring in sewage sumps
 - High water monitoring in underground vaults
- c. Coordinate the equipment and critical facilities to be controlled and/or monitored no later than midway through the design development phase.

2. Program Requirements

- a. Time Schedule:
 - i. Classrooms: Mondays – Fridays 7:00am – 3:15pm
 - ii. Administrative Offices: Mondays – Fridays 7:30am – 5:00pm
 - iii. Confirm time schedule during sequence review, no later than midway through development of construction documents.
- b. Temperature:
 - i. Cooling range: 72 - 76°F; set point 74°F
 - ii. Heating range: 68 - 72°F; set point 68°F
- c. Optimal Start and Stop (OSS): Specify that the EMS shall activate HVAC components to achieve the programmed temperature by the beginning of the time schedule.

3. Thermostats and Sensors

- a. Alerton Microset 4 Wall Sensor shall be provided with digital readout that allows the user to view room temperature, view outside air temperature, and adjust the temperature setpoint up or down a maximum of 2° F, with a 2 hour override time. User shall also be able to start and stop unit from the digital sensor.
- b. Alerton stainless steel wall plate Sensor shall be used in areas where user interface is not allowed.



Approved Manufacturers:

- Alerton

Substitutes Allowed:

No substitutes allowed.

Pursuant to Section 3400 of the Public Contract Code: Alerton Controls are now in use on the particular public improvement described as East Side Union High School District. At each instance in these specifications that a DDC EMS sensor is designated by the brand name “Alerton”, that product is designated to support the existing controls system that is in place at East Side Union High School District. The Contractor will furnish and apply only “Alerton” sensors as required, and no substitutions shall be deemed to be “or equal” or allowed.

Associated Design Standards and Construction Specifications

- Division 23 HVAC Design Standards
- Division 25 Integrated Automation

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