

SECTION 15550

CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. HVAC Equipment Thermostats
 - 2. Exhaust Fan Timeclocks

- B. Related Sections:
 - 1. Section 00700 "General Conditions."
 - 2. Section 00800 "Supplementary General Conditions."
 - 3. Section 15100 "Mechanical Materials & Methods."
 - 4. Section 15540 "Power Ventilators."
 - 5. Section 15500 "Packaged Air Conditioners."
 - 6. Section 15510 "Air Handling Units with Coils."
 - 7. Section 16000 "Electrical."

1.02 SUBMITTALS

- A. Product Data:
 - 1. Thermostat
 - 2. Timeclock

1.03 DELIVERY, STORAGE AND HANDLING

- A. Storage and Protection
 - 1. Maintain the manufacturer's original packaging until the equipment is on-site ready for installation.

1.04 WARRANTY

- A. Provide the manufacturer's one-year warranty on each control unit.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Thermostats:
 - 1. Honeywell

B. Timeclocks:

1. Paragon
2. Intermatic

2.02 EQUIPMENT

A. Thermostat

1. General Description:

- a) Thermostat shall be fully programmable, commercial application suitable for operation in temperatures from 40°F to 110°F and 5% to 90% percent non-condensing relative humidity. Thermostat shall be configurable for one or two stages of heating and cooling. Thermostat shall have a battery backup to preserve memory in the event of power failure. Thermostat shall have optional single point and averaging remote temperature sensing capability. Thermostat shall be Honeywell TB822OU series or approved equal.

2. Programming:

- a) Thermostat shall have separate occupied/unoccupied heating and cooling setpoints, three-hour unoccupied override timer, two-minute minimum heat stage operation timers, four-minute cooling-off stage timer, 45°F to 95°F setpoint ranges and a recovery algorithm that attempts to reach setpoint at the programmed occupied start time.

3. Operation:

- a) Thermostat shall incorporate proportional and integral control algorithms to cycle heating/cooling stages to maintain temperature setpoint.

B. Timeclock:

1. General Description:

- a) Timeclock shall be electromechanical type, seven day general purpose time control with 4-pole single-throw switch, 40 ampere contact rating at 277VAC, manual override, and synchronous motor suitable for operation from -40°F to 140°F, housed in a NEMA type 1 enclosure. Terminals shall accommodate up to #8 AWG wire. Minimum time setting shall be three hours, maximum time setting shall be 21 hours. Timeclock shall include 14 trippers.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Thermostats:

1. General:

- a) Install thermostats in locations as specified on the contract documents 48 inches above-finished floor. Thermostats shall be installed level. Mount and wire thermostats in accordance with the manufacturer's instructions.

B. Timeclocks

1. General:

- a) Install timeclocks in locations as specified on the contract documents. Install timeclocks level. Mount and wire timeclocks in accordance with the manufacturer's instructions.

3.02 FIELD QUALITY CONTROL

A. Thermostat

1. Check all functions of thermostat by entering a sample program. Verify operation of all thermostat functions and replace if defective.

B. Timeclock

1. Verify timeclock operation. Replace or repair if defective.

3.03 DEMONSTRATION

- A. Train Owner's representatives on procedures and schedules related to start-up, shutdown, troubleshooting, servicing, and preventative maintenance of the system. Schedule training with Owner's representative through the Architect.

END OF SECTION