

Suggested Specifications

Antec Controls LUME10

Division 23 – Heating, Ventilating, and Air Conditioning

Section 23 09 00 – Instrumentation and Control for HVAC

The following specification is for a defined application. Antec Controls would be pleased to assist in developing a specification for your specific need.

PART 1 - GENERAL

1.01 Section Includes

- A. Antec Controls LUME10

1.02 Related Requirements

- A. Section 01 30 00 – Administrative Requirements
- B. Section 01 40 00 – Quality Requirements
- C. Section 01 60 00 – Product Requirements
- D. Section 01 74 19 – Construction/Demolition Waste Management and Disposal
- E. Section 01 78 00 – Closeout Submittals
- F. Section 01 79 00 – Demonstration and Training

1.03 Reference Standards

- A. All referenced standards in this section pertain to the most recent publication thereof, including all addenda and errata.
- B. ISO 9001 - Quality Management Systems – Requirements.
- C. ISO/IEC 17025 - General Requirements for the Competence of Testing and Calibration Laboratories
- D. NEC - National Electric Code.
- E. NIST – National Institute of Standards and Technology.
- F. UL 916 - Standard for Energy Management Equipment.

1.04 Administrative Requirements

- A. Pre-installation Meeting: The contractor shall conduct a pre-installation meeting prior to the start of the work of this section and require attendance by all affected installers.

1.05 Submittals

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data shall be provided with data indicating configuration, materials used in fabrication, overall dimensions, electrical characteristics and connection requirements.
- C. Manufacturer's Installation Instructions shall indicate support and hanging details, installation instructions, recommendations and service clearances required.
- D. Project Record Documents shall record actual locations of units and controls components and locations of access doors.
- E. Operation and Maintenance Data shall include manufacturer's descriptive literature, operating instructions, maintenance and repair data and parts lists.
- F. Manufacturer's warranty shall be submitted and ensure forms have been completed in the Owner's name and registered with manufacturer.
- G. Maintenance Materials shall be furnished for the Owner's use in maintenance of the project.
 - 1. See Section 01 60 00 - Product Requirements, for additional provisions.

1.06 Warranty

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Provide 24-month manufacturer warranty from date of shipment.

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PART 2 – PRODUCTS

2.01 Manufacturer

- A. Basis of Design: Antec Controls
 - 1. Room Pressure Monitor: LUME10
- B. Acceptable Manufacturers:
 - 1. The plans and specifications for the pressure monitors are based on systems and equipment manufactured by Antec Controls.
 - 2. The pressure monitor provider shall be an entity that designs, develops, manufactures, and sells products and services to control and monitor the environment, airflow, and pressure of critical spaces using a Quality Management System registered to ISO 9001.
 - 3. In strict accordance with this specification, alternative pressure monitors and equipment shall only be considered for approval provided that the equipment is equal in every respect to the operational characteristics, capacities and intent of control sequences specified herein. Approval to bid does not relieve the pressure monitor supplier from complying with the minimum requirements or intent of this specification.
 - 4. Manufacturers submitting as alternate suppliers shall be in compliance with the Proposed Alternate Equipment described in Section 2.01 C.
 - 5. Other acceptable manufacturers can be submitted provided they meet the specifications.
 - 6. The engineer and owner shall be the sole judges of quality and equivalence of equipment, materials, methods and life cycle cost.
 - 7. Only those systems specifically named in this specification or by addendum shall be considered for approval. Other systems submitted after the bid opening shall be returned without review.
- C. Proposed Alternate Equipment:
 - 1. Equipment:
 - a. The pressure monitor supplier shall provide a detailed proposal describing all elements of the pressure monitors. A schematic layout shall be provided, showing relations of the elements therein, and a description of how they interact.
 - b. Technical specification data sheets shall be provided for all proposed system components and devices.
- D. Compliance Schedule:
 - 1. Any alternate pressure monitor supplier shall provide a separate compliance schedule, which shall include the section, paragraph and subparagraph of these specifications, and a direct statement to indicate compliance or noncompliance with the requirements. For all areas of noncompliance, the supplier shall describe what specific and alternative approach has been taken and document the impact this will have on the maintenance of the building.
- E. Factory Supplied Documentation:
 - 1. The manufacturer shall provide documentation for each device to address typical wiring, sequence of operation, physical dimensions of components, and installation procedures and requirements.
- F. Warranty:
 - 1. The warranty shall begin upon the date of shipment and continue for a period of two years. The warranty shall cover all products from manufacturer defect and include any replacement parts only during the coverage period.
 - 2. The manufacturer shall not include the cost of labor to replace or recalibrate, if necessary, any components found to be defective.
 - 3. The warranty shall not cover any product failure which results from, either directly or indirectly, any damage which occurs to the device by improper installation or from failure to comply with the preventative maintenance required per the manufacturer's instructions, or by codes set by local or facility authorities.

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2.02 LUME10: Room Pressure Monitor

- A. Description:
 - 1. Furnish and install Antec Controls model LUME11 in the quantities and configurations as indicated on the plans.
 - 2. The Room Pressure Monitor shall be an electronic device utilizing a flow-through style sensor, furnished and installed to measure differential room pressure between adjacent spaces and display the information on a digital interface mounted outside the critical space.

- B. Construction:
 - 1. Digital Display Unit:
 - a. The device shall be wall mounted in close proximity immediately outside the space being monitored.
 - b. Each monitor shall have a 4.3 inch thin-film-transistor (TFT), dimmable, full-color touch-screen display with a 480 x 800 resolution.
 - c. The device must utilize a password-protected menu format to permit access for programming or setpoint changes. Different levels of secure access shall be available using different passwords.

 - 2. Room Pressure Sensor:
 - a. The device shall be mounted above the door separating the spaces for which differential room pressure is being measured.
 - b. The sensor shall include cover plates on both sides of the wall for protection from drafts and/or cleaning solvents. The sensor cover plate shall be secured with security fasteners to prevent tampering.
 - c. The sensor shall maintain an accuracy of $\pm 3\%$ of reading. Sensors with accuracy rated as a percentage of full scale shall not be acceptable.
 - d. The sensor shall be capable of monitoring pressure from -0.25 to +0.25 in.w.c.
 - e. The device must utilize digital sensor technology. Flutter strips, ball-in-tube monitors or similar approaches that do not display actual quantitative differential room pressure information are not acceptable.
 - f. Sensor drift shall be less than 0.0004 in.w.c. (0.1 Pa) per year. Sensors with yearly drift specified as a percentage of their full scale range shall not be acceptable.
 - g. The sensor element shall be constructed in such a way that it is protected from the effects of dust or lint. Sensors with elements exposed to the airstream are not acceptable.

 - 4. Alarm:
 - a. The monitor shall include the ability for both audible and visual alarming during a user defined event, including low pressure, high pressure, emergency condition, and door status.
 - b. The alarm shall incorporate a user defined delay between time when the alarm setpoint is met and when the alarm initiates.
 - c. The monitor shall include a mute button which, when depressed during an alarm event, shall disable the audio alarm for a user defined length of time.

 - 5. Door Switches **[Optional]**:
 - a. Magnetic door switches shall be utilized to prevent nuisance alarms during room cleaning, patient transfer, or other situations requiring door(s) to be kept open for extended periods of time.
 - b. The door switches shall be wired directly to the room pressure monitor, and the alarm delay duration shall be field adjustable through the service menu on the monitor display interface.

- C. Commissioning:
 - 1. Configuration:
 - a. All available settings shall be adjustable through the touch-screen display. Commissioning shall be fully supported through the interface without the use of any additional tools or software.

 - 2. Duplication:
 - a. Each device shall permit the configuration to be copied, and this configuration can be uploaded to additional units if applicable. This is to be done through an ethernet based connection to a computer.

 - 3. Reports:
 - a. Each device shall have a programmatically generated commissioning report that details all device settings. This is to be done through an ethernet based connection to a computer.

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PART 3 – EXECUTION

3.01 Examination

- A. Verify that conditions are suitable for installation.
- B. Verify that field measurements are as shown on the drawings.

3.02 Installation

- A. The mechanical contractor, controls contractor, or factory authorized commissioning contractor shall install and wire the components of the room pressure monitor. This includes the display unit, transformer, room pressure sensor, tubing for sensor, all options and accessories including door switches.
- B. Cable/wire Requirements:
 - 1. All other cables/wires shall be provided by the installing contractor and shall meet the requirements set by the manufacturer.

3.03 Start-up and Commissioning

- A. Start-up shall include verifying proper installation, testing and calibrating pressure sensor, and setting all parameters and alarm setpoints.
- B. The Test and Balance (TAB) contractor shall be responsible for final verification of room pressure measurement.

3.04 Field Quality Control

- A. See Section 01 40 00 - Quality Requirements, for additional quality requirements.

3.05 Cleaning

- A. See Section 01 74 19 - Construction Waste Management and Disposal for additional cleaning requirements.

3.06 Closeout Activities

- A. The manufacturer or the manufacturer's representative shall provide a minimum of two hours of owner training to facilities personnel or other parties, as required.
- B. See Section 01 78 00 - Closeout Submittals for closeout submittals.
- C. See Section 01 79 00 - Demonstration and Training for additional closeout requirements.

END OF SECTION 23 09 00