

23 09 00 – Instrumentation and Control for HVAC

1. General

- A. The Building Automation System (BAS) manufacturer shall furnish and install a fully integrated building automation system, incorporating direct digital control (DDC) for energy management, equipment monitoring and control.
- B. All materials and equipment used shall be standard components, regularly manufactured for this and/or other systems and not custom designed especially for the project.
- C. BAS manufacturer shall be responsible for all BAS and Temperature Control wiring for a complete and operable system. All wiring shall be done in accordance with all local and national codes.
- D. The control system shall be fully compatible with the existing campus Facilities Automated Controls System (FACS). The existing system is Siemens Building Technologies. The new system shall have full control capability from the existing server and workstations located in the Duke University Facilities Management Department (FMD). All systems must be completely and seamlessly programmable through the existing graphical workstations through use of open protocol controllers or gateways. Any system that requires additional computers or software to program and control will not be acceptable. This Contractor must provide the cost for the complete integration of the new system open protocol controller and/or gateway to the existing system interface.
- E. The BAS system shall be designed, installed, commissioned and serviced by factory-trained personnel employed by the equipment manufacturer. Manufacturer shall have an in-place support facility within 120 miles of the site with a trained staff, spare parts inventory and necessary test and diagnostics equipment. Distributors or licensed installing contractors are not acceptable substitutes for a manufacturer-run support facility.
- F. Materials and equipment shall be the catalogued products of manufacturers regularly engaged in production and installation of automatic temperature control systems and shall be manufacturer's latest standard design.
- G. The system shall have a documented history of compatibility by design for a minimum of 15 years. Future compatibility shall be supported for no less than 10 years. Compatibility shall be defined as the ability to upgrade existing field panels and extend new field panels on a previously installed network.
- H. All work shall conform to the FMD Standard Controls Specifications. FMD must approve any deviations from the Standard control specifications in writing.
- I. All equipment must be supported directly by structural members with adequate load-bearing capacity and material integrity, using appropriate anchoring/connection

hardware. Under no circumstances may equipment be supported by connections to finish materials. For example, equipment hung from toggle bolts through plaster-on-lath, gypsum board or ACT ceilings is **not acceptable**.

J. For further information please contact:

Tom Young
Critical Systems Controls Engineer
Duke University
Facilities Management Department
Durham, NC 27708
Telephone: 919-660-1489