SECTION 25 30 00 – bas communication devices

1. GENERAL
   * + 1. RELATED DOCUMENTS
          1. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.
          2. Specifications throughout all Divisions of the Project Manual are directly applicable to this Section, and this Section is directly applicable to them.
          3. Refer to Section 25 00 00 - Building Automation System (BAS) General for definitions and abbreviations.
       2. SUMMARY
          1. Sections include:

Local Supervisory LAN Gateways/Routers.

Chiller Control Panels

Boiler Control Panels

AHU Control Panels

* + - * 1. Provide all interface devices and software to provide an integrated system connecting to Gateways and to the Owner’s Wide Area Network (BJC Healthcare Network).
      1. REFERENCE STANDARDS
         1. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition date.
         2. All reference amendments adopted prior to the effective date of this Contract shall be applicable to this Project.
         3. All materials, installation and workmanship shall comply with the applicable requirements and standards addressed within all references.

1. PRODUCTS
   * + 1. GENERAL
          1. All materials shall meet or exceed all applicable referenced standards, federal, state and local requirements, and conform to codes and ordinances of authorities having jurisdiction.
       2. LOcal Supervisory LAN Gateways/Routers
          1. The Supervisory Gateways shall be a microprocessor-based communications device that acts as a gateway/router between the Supervisory LAN and the Primary LAN.
          2. The Gateway shall perform information translation between the Primary LAN and the Local Supervisory LAN shall use BACnet over IP.
          3. The gateway shall contain its own microprocessor, RAM, battery, real-time clock, communication ports, and power supply [Include power supply for critical systems only. Remind Facility Contact that the battery must be included on Preventive Maintenance schedule.]. Each gateway/router shall be mounted in a lockable enclosure unless it is a PC that also serves as an OWS.
          4. The gateway/router shall allow centralized overall system supervision, operator interface, management report generation, alarm annunciation, acquisition of trend data, and communication with control units. It shall allow system operators to perform the following functions:

Configure systems.

Monitor and supervise control of all points.

Change control setpoints.

Override input values.

Override output values.

Enter programmed start/stop time schedules.

View and acknowledge alarms and messages.

Receive, store and display trend logs and management reports.

Upload/Download programs, databases, etc. as specified.

* + - * 1. **[Include following for equipment serving critical spaces or serving Boilers and Chillers]** Upon loss of power to the Gateway, the battery shall provide for minimum 100 hour backup of all programs and data in RAM.
        2. The Gateway shall be transparent to control functions and shall be required to control information routing on the Primary LAN (Global point information sharing between NAE Series controllers)
      1. Chiller Control Panels
         1. The Chiller Control Panel shall be a microprocessor-based communications device that uses BacNet protocol to communicate to the BJC BAS Network.
         2. The Chiller Control Panel shall contain its own microprocessor, RAM, battery, communication ports and, power supply.
         3. Each Chiller Control Panel shall support full bi-directional communications translation as more fully specified in Section 25 15 00.
         4. [Engineer to edit following list to add points as needed per project] The following points shall be mapped:

Chilled Water Supply and Return Temperatures.

Condenser Water Supply and Return Temperatures.

Power Consumption (kW).

Percent of Power Consumption (compared to maximum).

Bearing Temperature.

Suction and Head Pressures.

Suction and Head Temperatures.

All available alarms; common alarm as minimum.

Chiller Status.

Chilled water flow.

Chilled water differential pressure.

Chilled water bypass valve position.

Condenser water bypass valve position.

Enable/Disable.

Current Limit Percent.

Chilled Water Supply Setpoint and Setpoint Reset.

Condenser Water Setpoint and Setpoint Reset.

* + - 1. Boiler Control Panels
         1. The Boiler Control Panel shall be a microprocessor-based communications device that uses BacNet protocol to communicate to the BJC BAS Network.
         2. The Boiler Control Panel shall contain its own microprocessor, RAM, battery, communication ports, and power supply.
         3. [Engineer to edit following list to add points as needed per project] The following points shall be mapped:

Boiler Hot Water Supply and Return temp.

Hot Water Differential Pressure and Setpoint.

Primary Hot Water Supply and Return Temp.

Hot Water Supply Temp Setpoint and Reset.

Hot Water Pump VFD Speed.

Hot Water Pump Status.

Hot Water Pump VFD Fault.

Hot Water Pump Start/Stop.

Circulation Pump Status.

Circulation Pump Start/Stop.

Alarm Status.

Low Water Level.

Status.

Enable.

* + - 1. Air Handler Control Panels
         1. The Air Handler Control Panel shall be a microprocessor-based communications device that uses BacNet protocol to communicate to the BJC BAS Network.
         2. The Air Handler Control Panel shall contain its own microprocessor, RAM, battery **[Include battery for AHU’s serving critical spaces]**, communication ports, and power supply.
         3. [Engineer to edit following list to add points as needed per project] The following points shall be mapped:

Supply and Return Air Temperatures.

Supply Air Humidity.

Supply Air Static Pressure.

Supply Air Temperature Setpoint.

Cooling Valve.

Heating Valve.

Preheating Valve.

Supply, Return and Relief Fan Status.

Supply, Return and Relief Fan VFD Speed.

Supply, Return and Relief Fan VFD Fault.

Supply, Return and Relief Fan Start/Stop.

Supply, Return and Relief Fan Failure.

Heat Wheel VFD Speed.

Heat Wheel Discharge Air Temp.

Heat Wheel Status.

Heat Wheel VFD Fault.

Heat Wheel By-Pass Dampers.

Heat Wheel Start/Stop.

Heat Wheel Rotation Failure.

Heating Coil Pump Status.

Heating Coil Pump Start/Stop.

Heating Coil Pump Failure.

Pre-Heat Coil Pump Status.

Preheat Coil Pump Start/Stop.

High Static Shutdown.

Return Air Smoke Detector.

Freezestat.

Cooling Coil Pump Start/Stop.

Humidifier Enable.

Economizer Mixed Air Temperature Setpoint.

Pre-Filter and Final Filter Change Required.

1. EXECUTION
   * + 1. PREPARATION
          1. Examine areas and conditions under which control systems are to be installed. Do not proceed with Work until unsatisfactory conditions have been corrected in manner acceptable to Installer.
       2. INSTALLATION
          1. Installation shall meet or exceed all applicable federal, state and local requirements, referenced standards and conform to codes and ordinances of authorities having jurisdiction.
          2. All installation shall be in accordance with manufacturer’s published recommendations.
          3. Provide all interface devices and software to provide an integrated system.
          4. Closely coordinate with the Owner, or designated representative, to establish IP addresses and communications to assure proper operation of the building automation system with Owner’s WAN.

END OF SECTION 25 30 00