



ARS Export Supply / Little St. James Dehumidification Control

Description -

The existing facility is receiving a new air-cooled chiller to handle temperature and dehumidification for the facility library and temperature for the island manager's office; the island managers office will also receive a zero flow damper to stop air flow when temperature is satisfied. EMSBD has been asked to provide DDC mechanical control hardware and sequencing to accomplish said control parameters.

Proposed Solution -

EMSBD will provide a Small Building Controller and a Universal Unitary Controller 8s (both manufactured and warranted by HI Solutions, Inc.) to accomplish aforementioned control sequencing. The newly installed DDC system will control: chiller supply water temperature, chiller start/stop enable, chiller demand limit - via dry contact closure on chiller proprietary controls.

The DDC system will control the island managers office temperature via analog control output to damper actuator (actuator provided by others) through analog output voltage / current signal from DDC. The damper adjustment will control airflow and subsequently temperature. Airflow will be set to a minimum adjustment to make certain that there is always fresh air in the space. The office temperature will be averaged with the library temperature (taking the active humidity value) to provide chill water setback temperature. Ambient air temperature adjustment for the island manger's office will be provided through web based interface and local access through wall-mounted temperature adjustment module in the office.

The DDC system will control temperature and dehumidification in the library through the adjustment of the chiller supply water temperature and cycling of the strip heaters in the supply air duct. If available, air handler blower speed will be controlled via analog output signal from DDC. If the owner provided chiller has BACnet IP access available, the DDC system will provide available BACnet points and statuses via web-based interface.

A web-based graphical users interface will be provided via the DDC small building controller. The GUI will be customized for the users specific needs. Coordination with the facility network administrator will be required to integrate the GUI into the network. It is highly recommended that a VPN/VNC access be configured for short-term use; this access would enable EMSBD to remotely assist in/troubleshoot system issues with quick response times.

Sequencing of mechanical equipment PID loops will be 'tuned' while onsite installation is taking place. Although a target of 50/55% humidity is the goal, facility structure may come into play e.g., constant volume air handlers with fixed outside air, etc. EMSBD will qualify and commission finished installation with ARS (and a representative of the owner if requested).

All work to be performed within this scope is software based or specific to low voltage termination on a CLASS II control system. As such, it is assumed that permitting is not necessary therefore it will not be covered within the scope of this proposal. If it is determined that permitting is necessary, all permitting costs will be billed additionally.

Installation of cabling will be completed per NEC and local code.

Accommodations and transportation costs while onsite are not included within the scope of this proposal; arrangements for these expenses have been made with ARS.

Shipping costs for equipment are not included within the scope of this proposal; arrangements have been made for these expenses with ARS.
