COURSE NAME Ascent Fundamentals Course

FORMAT   Online eLearning

DURATION   12 weeks for completion of online courseware (approximately 45 hours of content).

SCHEDULE   Online Training is Self-Paced and should be completed prior to attending the Ascent Engineering & Commissioning Lab Course.

ASSESSMENT   Online training modules and knowledge checks.

AUDIENCE

This training course is targeted to building automation and control system Application/Field Engineers who are new to working with Alerton's control systems, including working with physical controllers and the system management software, Compass.

OVERVIEW

This course emphasizes the design, development, and commissioning of a BACtalk system using the Ascent platform software. Using mock plans and specifications students will learn the fundamentals of engineering and commissioning a BACtalk system.

During the design process, students will practice utilizing the engineering tools and standard library components provided by Alerton.

OBJECTIVES

After completion of this course students will be able to:

- Install the Compass program and BACnet protocol; plus configure a PC to be the primary Compass workstation.
- Launch the Compass Config Tool to configure the Localadministrator for Compass.
- Using the Compass Config Tool, create Rep/Job, validate SQL connectivity and set network parameters.
- Describe the different levels of an Alerton Automation System.
- Describe the functionality of both Alerton Global controllers and Field controllers.
- Describe and list the different license and hardware options for expanding an ACM.
- Describe the requirements of a BACnet system, define and describe devices, objects and properties. Differentiate between physical inputs and outputs, explain the way the priority array functions.
- Describe the stages of designing, installing and commissioning an Alerton Automation System.
- Assign MAC addresses to Alerton MS/TP devices and create a network addressing scheme for an Alerton Automation System.
- Utilize the Application Database to select the standard Alerton-supplied graphics, templates, DDC, and documentation that best match the project requirements.
- Use ACM builder to configure an ACM for multiple MS/TP networks and send the configuration to both the BACtalk.mdb database as well as create a device configuration file which can be sent to an ACM.
- Build a Navtree structure to be implemented for navigation of graphics being viewed within the Web Browser.
- Utilize Inkscape to create custom shapes that can then be applied to graphics in Compass.
- Describe the purpose and the process for input scaling on a VLC and VLCA controller.

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- Describe the function of DDC, differentiate between which DDC properties are read only and which ones are writeable.
- Use the Programmers Guide to correctly differentiate the Object properties for the different BACnet Objects resident in the various types of devices.
- Follow instructions that will guide the student through developing a simple DDC application to start and stop a fan as well as indicate an alarm in the event of fan failure as well as log the hours run.
- Use VisualLogic to open, create and save both DDC and VSD files.
- List the shortcut keys and processes in VisualLogic to help with linking, propagating, repeating and re-sequencing DDC functions.
- Describe the operation of the Two Input AND, Two Input OR, One Shot, Delay on Make, Delay on Break, Flip/Flop, Comparator, Gated Transfer, Transfer, Switch, High/Low Limit and Run Time Accumulator functions.

PREREQUISITES

- Knowledge of basic HVAC terms, principles, and concepts.
- A working knowledge of computers, networking and Microsoft operating systems & software, especially Excel and Visio.
- 64-bit Windows 10-based PC running a **32-bit version of Microsoft Office 2013, 2016 or 2019**. (**Excel**, **Visio**, and **Word** are required.) Please note that for DDC programming, Alerton's VisualLogic is a Visio extension which requires Microsoft ActiveX to function properly. **Microsoft ActiveX is a 32-bit only architecture**, so the ActiveX framework will **NOT** function if you install the 64-bit versions of Office or Visio.