HC900: Fundamentals – Controller and Control Station Implementation

Course Overview
Course number: HC-0001
Course length: 4 days

Need to design and implement your HC900 Hybrid Control System?
This course provides participants the ability to perform the following Hybrid Control System tasks:

- Choose the correct HC900 controller and I/O modules for your application.
- Build control strategies using Hybrid Control Designer software to create Function Block Diagrams.
- Use Station Designer software to configure the 900 Control Station HMI to provide an operator interface.

The course presents the HC900 Hybrid Controller and 900 Control Station hardware platforms and both configuration software packages. It includes hands-on lab exercises where students develop Function Block diagrams and Control Station configurations using Hybrid Control Designer and Station Designer software.

The course is divided into two sections. The first two and a half days cover the HC900 Controller. The remaining time will cover the 900 Control Station operator interface.

Course Benefits
Students will gain an understanding of the HC900 system architecture, configuration methods and commissioning tools to:

- Reduce setup time when starting a project
- Expand and/or optimize existing systems and configurations to improve process performance
- Understand and use function blocks to get the most from their systems
- Understand HC900 communications to expand system performance
- Use Widgets to quickly create Control Station displays that simplify operation and reduce operator errors

Course Delivery Options
- In-Center Instructor-Led Training
- On-Site Instructor-Led Customized Training (2 to 4 days)

Who Should Take This Course?
All control, application and maintenance engineers at a customer site who are responsible for the original configuration or ongoing maintenance of their HC900 Controller and 900 Control Station.

Prerequisite/Skill Requirements
Prerequisite Course(s)
- None

Required Skills and/or Experience
- Prior experience configuring process control systems.
- Working knowledge of Windows XP, Windows Vista or Windows 7

Desirable Skills and/or Experience
- Basic TCP/IP networking knowledge

Student Hardware and Software Requirements
- Students are required to bring a laptop PC with an Ethernet port and Windows 7, Vista or XP 32 bit operating systems. Students must have administrative privileges on the PC to make changes to its network settings and install the software
- A mouse is recommended for use with the configuration software packages

Course Topics
You will learn how to….

- Choose the proper HC900 hardware for your application.
  - Controller overview
  - System architecture
  - Redundant controller overview
  - 900 Control Station overview
- Install and use Hybrid Control Designer software to configure the HC900.
  - PC connection and software loading
  - Menus and toolbars
  - Editing and Monitoring
  - Documentation

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Course Topics continued

You will learn how to….

- Develop your HC900 control strategy using Function Blocks
  - Analog and Digital I/O blocks
  - Loop blocks
  - Setpoint Programmers and Recipes
  - Math, Calculation and Logic blocks
  - HC900 Alarms and Events
  - Application specific function blocks

- Use the HC900 to communicate with HC900 peers and third-party devices.
  - Peer Data Exchange
  - Modbus communications (fixed & custom map)
  - Modbus master / slave communications
  - Wireless interfaces

- Install and use Station Designer software to configure your Control Station.
  - Hardware overview
  - Software installation
  - Navigation and Attributes
  - Ethernet, USB and serial networking support

- Import an HC900 configuration to build the Control Station database.
  - Tag types and attributes

- Build Control Station displays
  - Standard and custom displays
  - Primitives, Widgets and Zoom Widgets
  - Symbols
  - Bitmaps and images

- Configure Control Station data logging
  - Trends
  - Log viewing
  - Data validation utility
  - Data export

- Setup FTP and Web access to Control Station.
  - Enable communications
  - Remote operation

- Configure Control Station Alarms and Security
  - Alarm and Event setup
  - Local security
  - Remote security

Additional Training

To increase your knowledge and skills, there are additional courses available from Automation College.