

# BAS Course Instruction



## WebCTRL Operator 3

<b>Who is this course for?</b>	<b>Individuals who have completed the WebCTRL Operator Level 1 and 2 courses—to further develop troubleshooting expertise</b>
<b>Format</b>	Instructor-led training with extensive hands-on tasks. The class environment is relaxed, and student participation is encouraged. Each student workstation includes a WebCTRL server and a set of online ALC hardware.
<b>Length</b>	3 days
<b>Objective</b>	Attendees will be able to: <ul style="list-style-type: none"> <li>• Troubleshoot ARCNET reconfigurations</li> <li>• Understand the theory of token passing</li> <li>• Perform module statuses identifying possible controller issues</li> <li>• Physically connect peripheral devices such as relays, sensors, and actuators</li> <li>• Troubleshoot various module level alarms</li> <li>• Identify failed peripheral devices and what to do to correct them</li> </ul>
<b>Prerequisites</b>	Completion of WebCTRL Operator Level 1 and 2 courses (or 6 months' field experience installing and setting up a WebCTRL system)
<b>Course Outline</b>	<p><b>DAY 1</b>  <b>Control Module Applications</b>  Detailed overview of the Automated Logic Hardware and the typical applications of each control module type (OptiFlex, LGR, OFBBC, ME-line, SE-line, ZN-line, RC-line, ZS-Sensors). If attendee system configuration includes older control modules, they will also be added to this discussion.</p> <p><b>Network Configuration</b></p> <ul style="list-style-type: none"> <li>• Discussion of basic network configurations including wiring guidelines and device locations for ARC156 network configurations</li> <li>• Module addressing discussion</li> </ul> <p><b>ARC156 Control Module Communications</b></p> <ul style="list-style-type: none"> <li>• Overview of the ALC token pass communication protocol (how modules communicate with one another)</li> <li>• Discussion and observation of the transmit and receive LEDs on each module</li> <li>• Exercise in troubleshooting ARCNET reconfigurations</li> <li>• Discussion on configuring WebCTRL network points and how they affect communication speed: attendees will configure network points and learn how the refresh time works on the system</li> </ul>

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# WebCTRL Operator 3 (cont)

## Course Outline

### **DAY 2**

#### **Module Startup**

- Discussion of and exercise in connecting laptop computer to the LGR local access port and the OptiFlex G5CE service port
- Exercise in verifying communications using the WebCTRL Modstat manual command
- Exercise in module addressing
- Exercise in downloading control programs by performing a memory download
- Exercise in hard formatting modules
- Overview of technical instructions
- Overview of steps to take before repairing or replacing a module
- Exercise in replacing a SE6104
- Exercise in adding a ZN341v+ (for Exec. B.x) including how to address the module
- Exercise in adding an AAR to the ARC156 network

#### **Eikon Control Programming**

- Discussion of typical programming styles
- Overview of most commonly used microblocks
- Exercise debugging a control program

### **DAY 3**

#### **Input/Output Points and Field Devices**

- Discussion of physical connection of peripheral devices such as relays, sensors, and actuators, including references to technical instruction documents
- Exercises in software configuration of points using the Checkout Commissioning tool
- Exercise in connecting an actuator, a relay, and a sensor, and properly configuring it

#### **Airflow Microblock**

- Discussion about the patented algorithm which provides fast response while minimizing overshoot and damper movements
- Exercise performing test and balance using the properties within the Airflow microblock

#### **Troubleshooting**

- Demonstration of various module level alarms and how to troubleshoot them
- Demonstration of various WebCTRL error pop-up dialogs that are caused by hardware problems and what to do to correct them
- Demonstration of symptoms of failed peripheral devices and what to do to correct them
- If time permits, open lab session where students can state specific errors they have seen and what could have caused them

#### **Review and Conclusion**