C313
QCS Advanced Sensor Operation and Troubleshooting

Learn the theory, electrical operation, alignment, troubleshooting through understanding of sensor operation, and preventive maintenance of ABB QCS basis weight, IR moisture, ash, and caliper.

Course type and methods
This is an instructor led workshop with short presentations and demonstrations, extended exercises, and hands-on sessions and discussion.

Student Profile
This course is targeted to end customers and Field Service personnel responsible for maintaining a Smart Platform or Network Platform QCS system.

Prerequisites
Students should have attended the C232 Smart Platform with QCS LAN course, C235 Network Platform with QCS LAN, or have extensive experience working with the Smart Platform or Network Platform QCS system.

Course objectives
Upon completion of this course the participants will be able to:
• Properly align the scanner head carriage
• Properly align the sensor
• Analyze the sensor operation through standardize data and check samples
• Ensure the base calibration is correct
• Analyze sensor stability, long and short term
• Recalibrate the basis weight, ash, and caliper sensors
• Match sensor setup to application
• Troubleshoot and correct sensor failures
• Calculate new grade code variables based on the application and correlation results

Main Topics
• Scanner
• Basis weight sensors
• Ash sensors
• IR moisture sensors
• Caliper sensors

Duration
The duration is 5 days
### Course Outline

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Introduction</td>
<td>Basis Weight</td>
<td>Ash</td>
<td>Moisture</td>
<td>Caliper</td>
</tr>
<tr>
<td>Course Content</td>
<td>Theory</td>
<td>Theory</td>
<td>Theory</td>
<td>Theory</td>
</tr>
<tr>
<td>Scanner considerations</td>
<td>Operation</td>
<td>Operation</td>
<td>Operation</td>
<td>Operation</td>
</tr>
<tr>
<td>- Alignment</td>
<td>Standardize</td>
<td>Standardize</td>
<td>Standardize</td>
<td>Standardize</td>
</tr>
<tr>
<td>- Setup</td>
<td>Gap Sensor</td>
<td>Influences</td>
<td>Influences</td>
<td>Influences</td>
</tr>
<tr>
<td>- PM</td>
<td>Influences</td>
<td>PM</td>
<td>PM</td>
<td>PM</td>
</tr>
<tr>
<td>- Scanner Lab</td>
<td>PM</td>
<td>Recalibration</td>
<td>Recalibration</td>
<td>Recalibration</td>
</tr>
<tr>
<td></td>
<td>Algorithm</td>
<td>Algorithm</td>
<td>Algorithm</td>
<td>Algorithm</td>
</tr>
<tr>
<td></td>
<td>Basis Weight Lab</td>
<td>Ash Sensor Lab</td>
<td>Moisture Sensor Lab</td>
<td>Caliper Sensor Lab</td>
</tr>
</tbody>
</table>

- **Day 1**
  - Course Introduction
  - Course Content
  - Scanner considerations
    - Alignment
    - Setup
    - PM
  - Scanner Lab

- **Day 2**
  - Basis Weight
    - Theory
    - Operation
    - Standardize
    - Gap Sensor
    - Influences
    - PM
    - Recalibration
    - Algorithm
    - Basis Weight Lab

- **Day 3**
  - Ash
    - Theory
    - Operation
    - Standardize
    - Influences
    - PM
    - Recalibration
    - Algorithm
    - Ash Sensor Lab

- **Day 4**
  - Moisture
    - Theory
    - Operation
    - Standardize
    - Influences
    - PM
    - Algorithm
    - Moisture Sensor Lab

- **Day 5**
  - Caliper
    - Theory
    - Operation
    - Alignment
    - Applications
    - Standardize
    - Recallibration
    - Influences
    - PM
    - Algorithm
    - Caliper Sensor Lab
    - Final Exam
    - Course Critique

To register, contact the North America Customer Service Center or visit us online ABB Inc.

+1 800 HELP 365 Option 2, Option 4
Fax: +1 919 666 1388
abbuniversity@us.abb.com

abb.us/abbuniversity

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB AG.

Copyright © 2017 ABB
All rights reserved