TRAINING
JANUARY – JUNE 2023

Take advantage of in-depth manufacturer knowledge

PERFORMANCE-BASED TRAINING TAILORED TO MEET YOUR SPECIFIC NEEDS.

innovating automation

Unlike other automation training that is mostly theoretical, our training emphasizes skills. We use hands-on labs to give participants the chance to learn by doing things, not just hearing things. Our instructors bring a wealth of application experience, practical tips, and best practices to make concepts come alive.

Want to pick only the lessons that apply to your company? Want to build a curriculum that fits into your time constraints and your budget? We can easily accommodate you with our modular development approach. Lessons can be pulled from multiple courses to give you just what meets your needs.

What have customers been saying about our training?

"I am glad I took this class. I feel I am more able to apply all this knowledge to select the right sensor and look forward for new technologies for future projects."
Ulices Gama, Packaging Engineer – IMS Buhrke-Olsen

"...this class was a great tool to learn and hit the ground running in configuring and monitoring IO-Link devices. The class is very detailed, the instructor is very knowledgeable and engaging, and I walked away confident in my abilities to operate IO-Link devices."
Anthony Ramsey, Jr; Electrical Design Engineer – Parker Hannifin

"The class was well worth the time and money. It covered topics in a way that was easy to understand..."
Leighton Burgess, Electrical Engineer – Engineering Innovation

"The class was very well structured....
Overall – the best training class I have ever attended!"
Randy Schaeffer, Application Engineer – HH Barnum

CONTENT

Professional automation training

SENSOR FUNDAMENTALS

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This course is designed to introduce participants to a range of different sensor technologies and their connection, installation, and configuration. The Sensor Fundamentals course will enable you to select the correct sensor for a given application.

Structure of the Course

The Sensor Fundamentals course uses a hands-on approach. Participants will use a sensor demo which contains inductive, capacitive, ultrasonic, photoelectric type sensors, and all the necessary media and power supplies.

Course Content
- Overview of sensor families and operating technology
- Selecting the correct sensor
- Connecting sensors
- Installing a sensor
- Troubleshooting a sensor

Target Audience
Anyone who would like to learn the fundamentals of sensors

Prerequisite
None

Duration
1 day

2023 Dates and Locations
- April 4
  Balluff, Florence, KY
  ID #10186

Order Number and Price
Sensor Fundamentals
BSS EDU-I-220-001
$500 per individual

Please sign up promptly, the number of participants is limited to 5 people. We follow current Covid19 guidelines.

Manage signals intelligently and cost-effectively

IO-LINK

innovating automation

This course is designed to introduce participants to the basic functionality, capabilities, operating principles, and benefits of IO-Link. Participants will configure IO-Link devices including master devices and expansion devices. Learn how to use IO-Link to make analog, digital, and transducer data available to an existing fieldbus network.

Structure of the Course

The IO-Link course uses a hands-on approach. Participants will use a laptop equipped with the software needed for the class. Students will also use a workstation with an Allen-Bradley controller, an IO-Link master, several IO-Link devices, and all the necessary media and power supplies.

Course Content

- IO-Link overview
- Configuring and using an IO-Link master
- Using Add-On Instructions, User-Defined Data Types and Tags
- SmartLight overview and configuration
- Using an IO-Link BTL
- Using a valve manifold
- Using an analog input and output
- Using an expansion hub
- Using an IO-Link power supply
- Using a pressure sensor
- Using Balluff inductive couplers (BIC)
- Parameterization

Target Audience

Engineers and integrators or anyone interested in IO-Link technology

Prerequisite

None

Duration

3 days

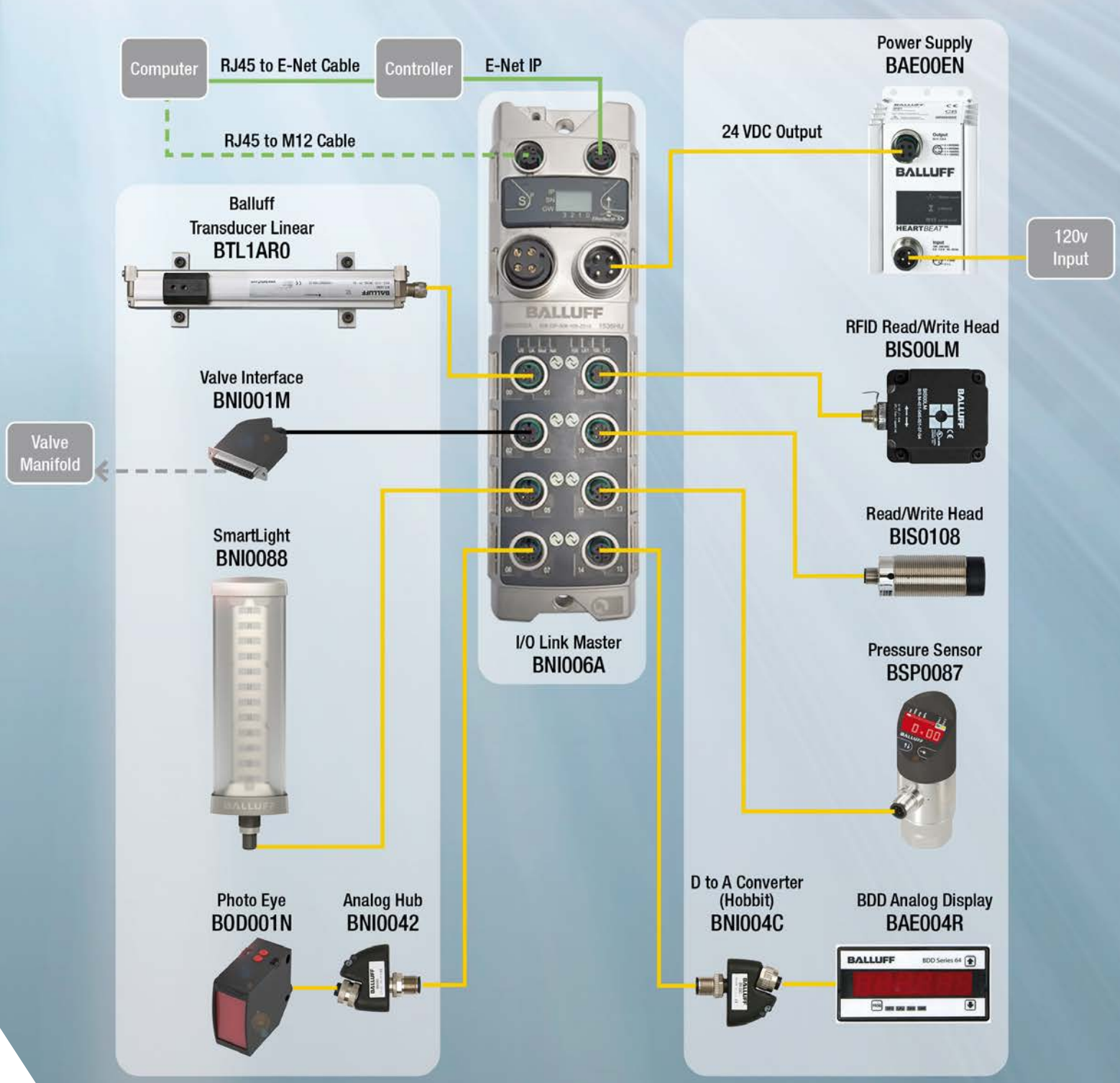
2023 Dates and Locations

- February 14–16
  Balluff, Florence, KY
  ID #10184
- June 13–15
  Balluff, Florence, KY
  ID #10187

Order Number and Price

IO-Link
BSS EDU-I-250-001
$1500 per individual

Please sign up promptly, the number of participants is limited to 5 people. We follow current Covid19 guidelines.


Computer
RJ45 to E-Net Cable
Controller
E-Net IP
RJ45 to M12 Cable
Power Supply
BAE00EN
24 VDC Output
120v Input
Balluff
Transducer Linear
BTL1AR0
RFID Read/Write Head
BIS00LM
Valve Interface
BNI001M
Valve Manifold
Read/Write Head
BIS0108
SmartLight
BNI0088
I/O Link Master
BNI006A
Pressure Sensor
BSP0087
D to A Converter
(Hobbit)
BNI004C
BDD Analog Display
BAE004R
Photo Eye
BOD001N
Analog Hub
BNI0042

Industrial identification

RFID ARCHITECTURE AND IMPLEMENTATION

innovating automation

This course is designed to prepare someone to commission RFID systems, add or replace devices, configure the components, and access RFID data in a controller.

Structure of the Course

The RFID Architecture and Implementation course uses a hands-on approach. Participants will use a laptop equipped with the Dashboard, UHF Manager, and Studio 5000 software needed for the class. Students will also use a workstation with a controller, RFID components, and all the necessary media and power supplies.

Course Content

- Fundamentals of RFID
- Processors
- Read/Write heads
- Physical characteristics of tags
- Factors that affect range
- Using an IO-Link master
- Using Add-On Instructions, User-Defined Data Types and Tags
- Adding an IO-Link expansion device to a Studio 5000 project
- Implementing RFID on IO-Link
- Implementing a BIS-V processor
- Implementing an All-In-One processor
- Implementing a UHF One-Channel processor
- Implementing the USB reader

Target Audience

Anyone who would like to learn the basics of RFID architecture and implementation

Prerequisite

None

Duration

3 days

2023 Dates and Locations

- Date March 21–23
  Balluff, Florence, KY
  ID #10185

- Date June 20–22
  Balluff, Florence, KY
  ID #10188

Order Number and Price

RFID Architecture and Implementation
BSS EDU-0-260-002
$1500 per individual

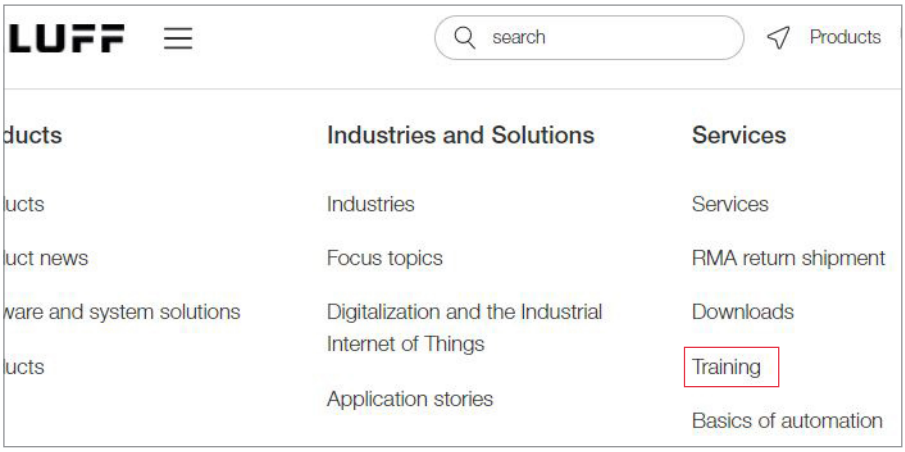
Please sign up promptly, the number of participants is limited to 5 people. We follow current Covid19 guidelines.

COURSE REGISTRATION

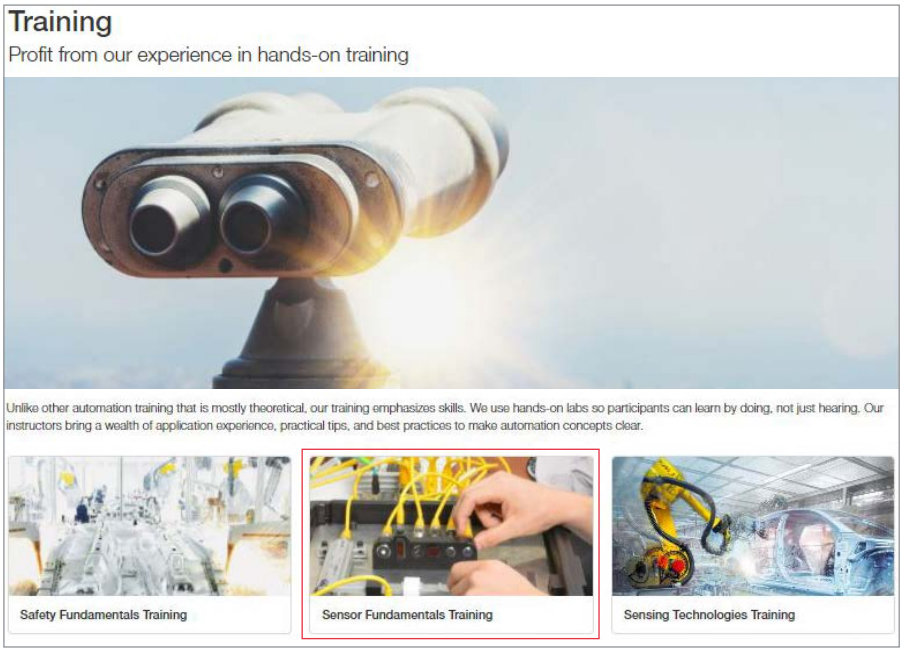
- Register online for the course.
- You will receive an email confirming your enrollment after submitting the online registration form. (Please check your spam folder if you do not receive the email.)

1. Click the menu icon located at the top left of the Balluff home page. (www.balluff.com/en-us)

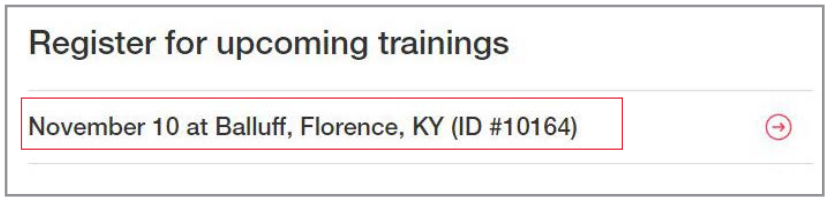
2. Select **Training** from the menu.



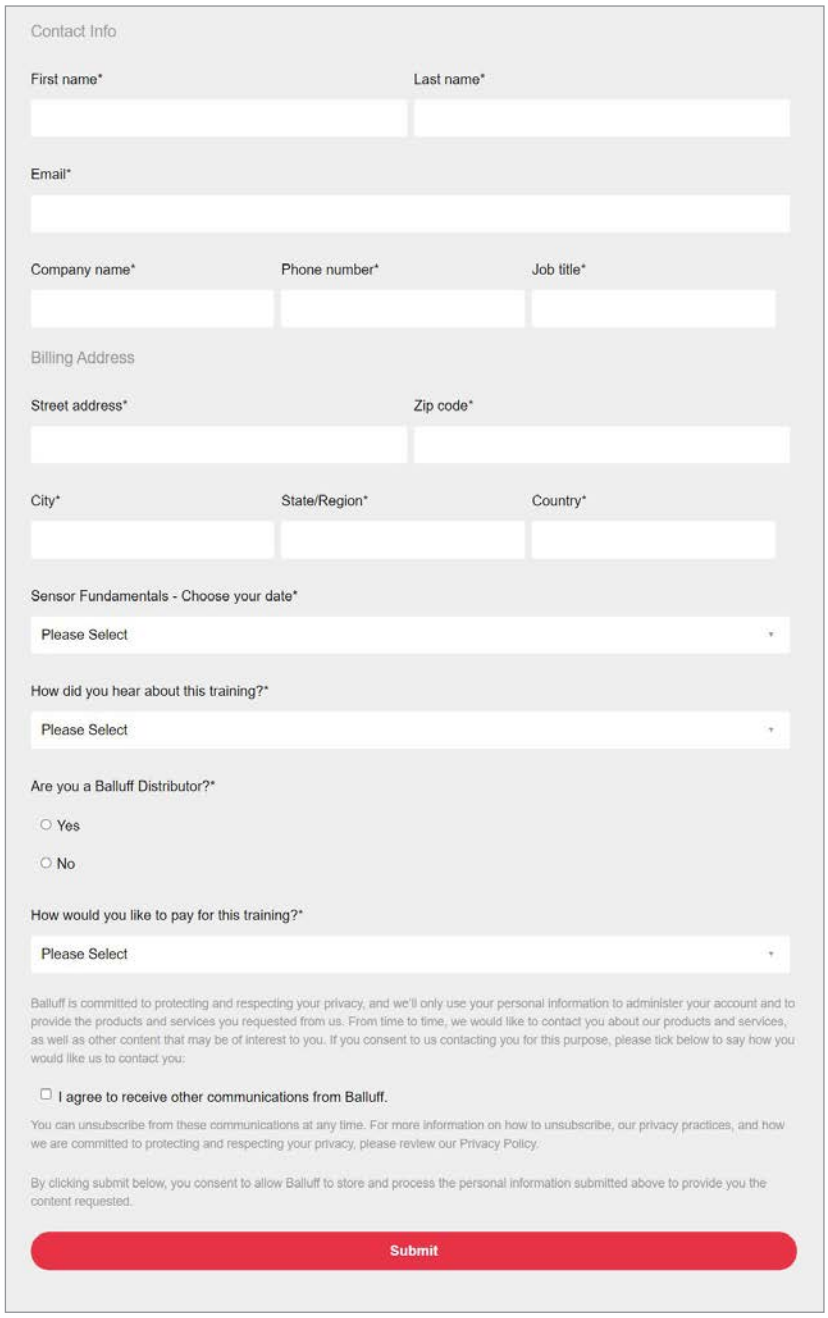
3. On the Training page, scroll down and click on a course image to find more information about the course and a link to the registration form.



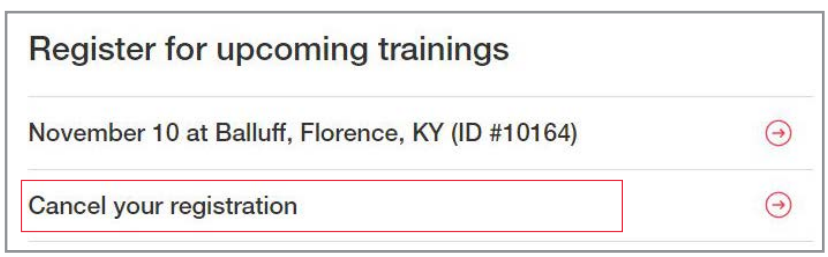
4. Click on the link to open the registration page for the course you want to attend.



5. Fill out and submit the online registration form.



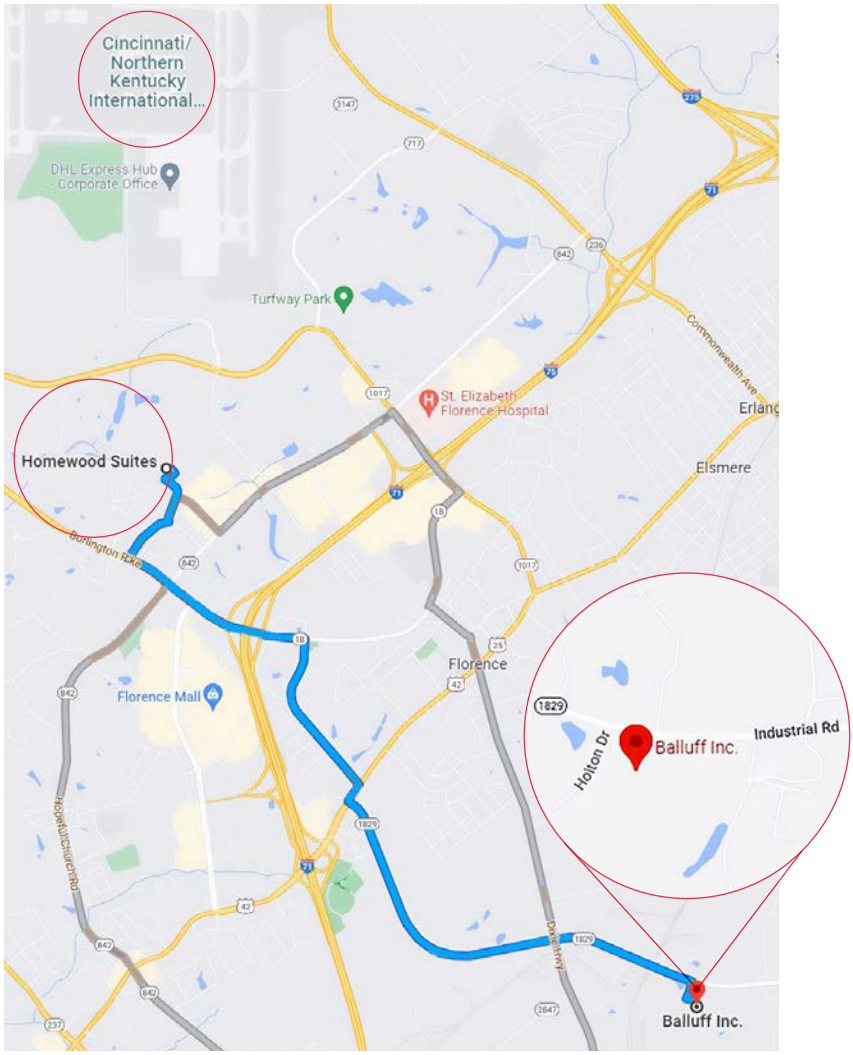
Note: To cancel your registration, use the “Cancel your registration” link to access the “Training Cancellation Form.”



COURSE INFORMATION

- Class hours are 8:00am – 4:30pm
- The course will be held at:
  Balluff, Inc.
  7055 Industrial Road
  Florence, KY 41042
- Balluff recommended lodging:
  Homewood Suites Cincinnati Airport
  1090 Vandercar Way
  Florence, KY 41042
  (859) 283-2111
  Note: Be sure to ask for the Balluff corporate rate.
- Meals and transportation are not provided by Balluff.

We look forward to seeing you!



Cancellation Policy
If you cannot attend after registering, you have two options:
Option 1 – Send another participant in your place.
Option 2 – Use the online *Training Cancellation Form* to cancel your enrollment. Please cancel 14 days before the start date of the course if possible.

Disclaimer
Balluff reserves the right to cancel seminars/training courses at under-occupancy, loss of faculty or for other reasons, even after confirmation. A claim for damages against Balluff not yielding. Balluff assumes no liability for any errors in technical information that is transmitted verbally or in writing in the seminars or contained in the documents. Likewise, no liability for any resulting damage or consequential damage is taken.

To ensure the safety of our registrants, we will follow all current COVID-19 safety protocols.

Course Index

Sensor Fundamentals

This course is designed to introduce participants to a range of different sensor technologies and their connection, installation, and configuration. The Sensor Fundamentals course will enable you to select the correct sensor for a given application.

Upcoming Dates:
April 4, 2023

See page 6.

Course structure: The Sensor Fundamentals course uses a hands-on approach. Participants will use a sensor demo which contains inductive, capacitive, ultrasonic, photoelectric type sensors, and all the necessary media and power supplies.

Duration: 1 day

Prerequisites: None

Target Audience: Anyone who would like to learn the fundamentals of sensors

Course Content:

- Overview of sensor families and operating technology
- Selecting the correct sensor
- Connecting sensors
- Installing a sensor
- Troubleshooting a sensor

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IO-Link

This course is designed to introduce participants to the basic functionality, capabilities, operating principles, and benefits of IO-Link. Participants will configure IO-Link devices including master devices and expansion devices. Learn how to use IO-Link to make analog, digital, and transducer data available to an existing fieldbus network.

Upcoming Dates:
Feb. 14-16, 2023
June 13-15, 2023

See page 8.

Course structure: The IO-Link course uses a hands-on approach. Participants will use a laptop equipped with the software needed for the class. Students will also use a workstation with an Allen-Bradley controller, an IO-Link master, several IO-Link devices, and all the necessary media and power supplies.

Duration: 3 days

Prerequisites: None

Target Audience: Engineers and integrators or anyone interested in IO-Link technology

Course Content:

- IO-Link overview
- Configuring and using an IO-Link master
- Using Add-On Instructions, User-Defined Data Types and Tags
- SmartLight overview and configuration
- Using an IO-Link BTL
- Using a valve manifold
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- Using an expansion hub
- Using an IO-Link power supply
- Using a pressure sensor
- Using Balluff inductive couplers (BIC)
- Parameterization

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RFID Architecture and Implementation

This course is designed to prepare someone to commission RFID systems, add or replace devices, configure the components, and access RFID data in a controller.

Upcoming Dates:
Mar. 21-23, 2023
June 20-22, 2023

See page 10.

Course structure: The RFID Architecture and Implementation course uses a hands-on approach. Participants will use a laptop equipped with the Dashboard, UHF Manager, and Studio 5000 software needed for the class. Students will also use a workstation with a controller, RFID components, and all the necessary media and power supplies.

Duration: 3 days

Prerequisites: None

Target Audience: Anyone who would like to learn the basics of RFID architecture and implementation

Course Content:

- Fundamentals of RFID
- Processors
- Read/Write heads
- Physical characteristics of tags
- Using an IO-Link master
- Using Add-On Instructions, User-Defined Data Types and Tags
- Adding an IO-Link expansion device to a Studio 5000 project
- Implementing RFID on IO-Link
- Implementing a BIS-V processor
- Implementing an All-In-One processor
- Implementing a UHF One-Channel processor
- Implementing the USB reader

Course Index

Hydraulics and Pneumatics

The Hydraulics and Pneumatics course explains what fluid power systems are and how they are used in certain industries. This course will enable someone to identify common fluid power application problems and recommend solutions for a given application.

Upcoming Dates:
No dates scheduled at this time.

Course structure: The Hydraulics and Pneumatics course uses a hands-on approach. Participants will use a fluid power demo and a laptop equipped with the software needed for the class.

Duration: 1 day

Prerequisites: None

Target Audience: Anyone who would like to learn the basics of hydraulic and pneumatic applications

Course Content:

- Overview of fluid power systems and industries
- Hydraulic systems
- Fluid power system application solutions
- Studio 5000 overview
- Hydraulic safety
- Hydraulic system diagnostics

Course Index

Safety Fundamentals

The Safety Fundamentals course will prepare individuals who need to implement safety devices connected to a Balluff safety hub.

Upcoming Dates:
No dates scheduled at this time.

Course structure: The Safety Fundamentals course uses a hands-on approach. Participants will use a safety demo which contains a sampling of various safety components. This demo is used in the lab exercises. It contains an E-Stop, a light curtain, a gate switch, and a safety hub. It also contains a safe PLC.

Duration: 1 day

Prerequisites: None

Target Audience: Anyone who would like to learn about fundamentals of safety

Course Content:

- Safety overview
- Balluff BNI0098 safety hub
- Emergency stops (E-Stops)
- Light curtain
- Safety switches

Doc. no. 942367 EN, L22; Subject to change. Replaces E22.

HOW TO REACH US

USA
Balluff Inc.
8125 Holton Drive
Florence, KY 41042
Phone: (859) 727-2200
Toll-free: 1-800-543-8390
Fax: (859) 727-4823
balluff@balluff.com

Canada
Balluff Canada, Inc.
2840 Argentia Road, Unit #1
Mississauga, Ontario L5N 8G4
Phone: (905) 816-1494
Toll-free: 1-800-927-9654
Fax: (905) 816-1411
balluff.canada@balluff.ca

Mexico
Balluff de México SA de CV
Anillo Vial II Fray Junípero Serra No. 4416
Colonia La Vista Residencial.
Querétaro, Qro. CP76146
Phone: (++52 442) 212-4882
Fax: (++52 442) 214-0536
balluff.mexico@balluff.com

www.balluff.com