

Safety

Safety Relays and Devices
Maintenance and Troubleshooting



Course Number

SAF-COM101

Course Purpose

This course will introduce you to monitoring safety relays and input and output devices used to configure safety systems according to industry standards for functional safety of machinery.

You will have the opportunity for hands-on experience with several of these components, which will help you to learn how they interact in safety systems.

After completing this course, you should be able to maintain and troubleshoot relay-based machine functional safety systems with the following devices:

- Monitoring Safety relays
- Operator interface devices (e-stop pushbutton and grip enabling switch)
- Electromechanical switches (interlock)
- Electronic switches (non-contact RFID interlock)
- Opto-electronic presence sensing devices (light curtain and safety sensor)
- Pressure sensing devices (safety mat)

COURSE AGENDA

DAY 1

- Identifying Relay-Based Machine Functional Safety Systems and Components
- Maintaining Relay-Based Machine Functional Safety Systems
- Interpreting and Clearing Faults at the Safety Relay
- Interpreting and Clearing Faults for Wiring in Safety Systems

DAY 2

- Interpreting and Clearing Faults for E-Stop Pushbuttons and Grip Enabling Switches
- Interpreting and Clearing Faults for Interlock and Non-Contact Switches
- Interpreting and Clearing Faults for Light Curtains and Safety Sensors
- Interpreting and Clearing Faults for Safety Mats
- Interpreting and Clearing Faults for Safety Outputs

WHO SHOULD ATTEND

Individuals who maintain and troubleshoot electrical circuits or machine systems and need to learn more about how to apply their skills to relay-based machine functional safety systems should attend this course.

PREREQUISITES

To successfully complete this course, the following prerequisites are required:

- Interpreting industrial electrical circuit schematics
- Maintaining industrial electrical circuits or machine systems

STUDENT MATERIALS

To enhance and facilitate the students' learning experiences, the following materials are provided as part of the course package:

- Student Manual
 - Includes the key concepts, definitions, examples, and activities presented in this course
- Lab Book
 - Provides learning activities and hands-on practice. Solutions are included after each exercise for immediate feedback.
- Troubleshooting Safety Systems Flowchart
 - Offers an overview of the decision-making process that can be used later on the job.

HANDS-ON PRACTICE

Throughout this course, you will have the opportunity to practice the skills you have learned through a variety of hands-on exercises using a safety components workstation (Catalog Number ABT-TDSAFCOMP). Exercises focus on the skills introduced in each lesson.

NEXT LEARNING LEVEL

Once you have an understanding of the topics and skills covered in this course, you may want to attend specific safety training such as:

- *Functional Safety for Machinery Technician Certification (TÜV Rheinland)* (Course No. SAF-TUV0T)

COURSE LENGTH

This is a two-day course.

TO REGISTER

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley® Distributor or your local Sales/Support office for a complete listing of courses, descriptions, prices, and schedules.

You can also access course information via the Web at <http://www.rockwellautomation.com/training>

To be respectful of the environment, Rockwell Automation is transitioning some of its training courses to a paperless format. Students are asked to complete downloads and bring personal devices to these classes. A full list of digital/paperless courses is currently available through your local distributor.

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