

# TÜV Rheinland Functional Safety for Technicians

Comprehensive two-and-a-half-day training with exam



- Develop your team's expertise on safety products
- Ensure the proper maintenance of your safety systems
- Demonstrate your commitment to employee development

# TÜV Rheinland Functional Safety Training Program



## Grow your team's confidence with much-needed skills

With TUV Rheinland certification, you can give your team the confidence they need to work with safety products and their corresponding applications. Participants will learn how to maintain machine safeguarding devices and safety-related controls to meet standard requirements.

## Coursework will cover the following topics:

- General safety concepts
- Advantages and disadvantages of various safety components
- Validation of operation for common safety components
- Safe distance calculation
- Maintenance and repair of safety systems
- "Safe" modification of existing systems for temporary situations

Training will encompass 2.5 days with an exam at the end. Successful students will receive TUV Rheinland Certification as a FS Technician and will be listed on the TUV Rheinland Certipedia.

Origins of Hazard and managing Stopping the them with Machine Mechanical Means	Managing the Safety Related Controls: The Safety Logic Controller	Are we OK to run production? Safety Inputs / Switches	Detecting a Person in the Hazard Area: Electro Sensitive Protective Equipment	Preventing Unexpected Machine Movement: Safety Outputs	Validation
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	<ul> <li>Origins of Harm</li> <li>Hazard vs Risk</li> <li>Tollerable Risk</li> <li>ISO 13849-2 Annex A</li> <li>Types of Guards</li> </ul>	Emergency Stop     Stop Categories     ISO 13849-2 Annex D     Performance Levels     Fault Detection     Redundancy vs Diversity	<ul> <li>Fail to safe</li> <li>Safe Relays</li> <li>Safety Logic Contollers</li> <li>Fault Detection "Monitoring"</li> <li>Processor Faults</li> <li>Common SPLC faults</li> </ul>	<ul> <li>Dry contact safety switches</li> <li>Guardlocking Switches</li> <li>Solid state switches</li> <li>Faults</li> <li>Best Practices</li> </ul>	Bumpers     Safety Mats     Mats,     Bumpers,     Edges     Light Curtains     Safe Distance     Laser     Scanners	Force Guided Relays     EDM     VFD Overview     STO     Other VFD Safety Functions	Safety function     Validation     Fault lists     Performance     Level     requirements     Test sheets     Documentation
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# Give your valued employees some valuable credentials

TUV Rheinland Certification is a solid testament to the skills and knowledge of your team members and will help bolster your company's overall reputation. Omron is proud to be a trusted partner in functional safety training for industry professionals.

## Who should participate in the TUV Rheinland Functional Safety for Technicians program?

The program is ideal for the following professionals:



Maintenance personnel who need confidence in maintaining and validating safety systems



EHS managers seeking an understanding of general requirements



**Plant engineering teams** in need of a stepping-stone towards TUV Functional Safety Engineering



HR departments interested in furthering employee development and retention while adding value to the organization





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Authorized Distributor:

#### Controllers & I/O

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- Programmable Logic Controllers (PLC) Temperature Controllers Remote I/O

#### **Robotics**

• Industrial Robots • Mobile Robots

## **Operator Interfaces**

• Human Machine Interface (HMI)

#### **Motion & Drives**

- Machine Automation Controllers (MAC) Motion Controllers Servo Systems
- Frequency Inverters

### Vision, Measurement & Identification

• Vision Sensors & Systems • Measurement Sensors • Auto Identification Systems

#### Sensing

- Photoelectric Sensors Fiber-Optic Sensors Proximity Sensors
- Rotary Encoders Ultrasonic Sensors

#### Safety

- Safety Light Curtains Safety Laser Scanners Programmable Safety Systems
- Safety Mats and Edges Safety Door Switches Emergency Stop Devices
- $\bullet \, \mathsf{Safety} \, \mathsf{Switches} \, \& \, \mathsf{Operator} \, \mathsf{Controls} \, \bullet \, \mathsf{Safety} \, \mathsf{Monitoring/Force-guided} \, \mathsf{Relays}$

#### **Control Components**

- Power Supplies Timers Counters Programmable Relays
- Digital Panel Meters Monitoring Products

#### **Switches & Relays**

- Limit Switches Pushbutton Switches Electromechanical Relays
- Solid State Relays

#### Software

 $\bullet \ \mathsf{Programming} \ \& \ \mathsf{Configuration} \ \bullet \ \mathsf{Runtime}$