



Safety Assurance for Robotics

PROVING THE SAFETY AND QUALITY OF YOUR ROBOTS AND ROBOTIC SYSTEMS

The robotics industry is growing at a rapid rate, as robots have established their worth in a long – and growing – list of applications.

Whether your company is designing, installing, or utilizing robots in manufacturing, service, personal care, or any other number of new innovative implementations, safety is of paramount importance. You need more than a testing laboratory to ensure safety and to meet regulations. You need a worldwide compliance partner that understands the challenges surrounding evolving technologies and markets.

TÜV Rheinland is your one-stop shop for robotics, no matter your compliance needs or the type of robots or robotic cells you've developed. Our experts understand the factors at work in the robotics industry and provide services that can boost your company's competitive edge. With state-of-the-art laboratories located around the world and an international reputation for excellence, TÜV Rheinland supports your goals for compliance, safety and functionality in a fast-paced industry.

TYPES OF ROBOT APPLICATIONS

Industrial or consumer, fixed or mobile, we're the industry expert for all types of robotics applications.

- **Personal Care Robots** – intended for non-industrial applications, these robots perform actions that improve the quality of life for humans, including handling objects or exchanging information
- **Traditional Industrial Robots and Robot Cells** – an actuated mechanism programmable in two or more axes, moving within its environment to perform intended tasks. A complete robot cell system includes the robot, controller, and other parts needed to allow the robot to function safely in the work environment, such as guard and conveyors
- **Autonomous Mobile Robots (AMRs)** – multi-axis system that can independently choose a path based on its environment
- **Collaborative Robots** – designed to perform tasks concurrently during a production operation, and can come into direct interaction with a human in a defined workspace
- **Automated Guided Vehicles (AGVs)** – any battery-operated industrial truck or service vehicle that is operated autonomously. It relies on a guidance structure such as radio, wire, or markers to navigate

TÜV Rheinland Services

PRODUCT TESTING & CERTIFICATION

The main standards used globally for robots and robotic cells

- US – UL 1740, ANSI/RIA R15.06
- Canada – CAN/CSA Z434
- EU and globally – EN/ISO 10218
- Japan – JIS B 8433

Along with these major standards, TÜV Rheinland provides further testing and certification to application-specific standards.

NRTL COMPLIANCE

TÜV Rheinland is accredited as an NRTL by OSHA, and as a Product Certification Body by the SCC. Our mark tells both consumers and business partners that your products have been thoroughly tested and specifically certified to comply with electrical and fire safety regulations.

FIELD EVALUATION SERVICES

Individual machinery/equipment installation inspections and listing for approval by local authorities having jurisdiction. CE Marking Assistance – Our world-wide network of experts can assist with everything from determining the proper product standards and EU directives, to fully assessing the product for you.

RISK ASSESSMENT ASSISTANCE

We can facilitate a risk assessment review and guide you through the process as dictated in ISO 12100 to provide you with a risk assessment that is the framework for your safe product and the product assessment.

FUNCTIONAL SAFETY

TÜV Rheinland offers functional safety services for the robotics and machinery industries according to worldwide relevant standards IEC 61508, IEC 62061, ISO 13489-1, and others.

CYBERSECURITY

Protect machines and production lines from cyber risks with Interoperability Assessments, Penetration Testing, IT Security Analysis, Assessment to IEC 62443, and other cybersecurity strategies.

WIRELESS TESTING

Leveraging local service and a global network, TÜV Rheinland provides an end-to-end wireless and IoT test solution. Our service portfolio includes regulatory, interoperability, performance, safety, and security. We test with industry alliances for both long and short-range devices across various industries.

ELECTROMAGNETIC COMPATIBILITY TESTING

As an authorized body and international service provider, we offer a flexible, competent service to help you meet the requirements of this directive. Our conveniently located, state-of-the-art EMC testing facilities can meet any of your EMC testing needs.

MARKET ACCESS SERVICES

Our global compliance experts can help you to navigate international regulatory and compliance requirements for your products.

TÜV RHEINLAND ROBOT INTEGRATOR PROGRAM

This innovative program gives manufacturers the opportunity to use a single mark to certify all of their custom robotic cells as meeting ANSI/RIA R15.06. This mark can be recognized by future inspectors, Authorities Having Jurisdiction (AHJs) and others as a symbol that the robot cell is compliant with each standard listed on the label.

ABOUT TÜV RHEINLAND

TÜV Rheinland is a global leader in independent inspection services, founded more than 145 years ago. Based in Cologne, Germany, we maintain a worldwide presence of more than 20,000 employees working to ensure quality and safety. Our network of experts participate in the entire process of getting robots and robot cells to market, from development to deployment. Not only does our team understand the key industry standards for robotics, we help create them. TÜV Rheinland has participated in or contributed to prominent industry committees, including ISO/TC 299, and is a member of the Robotic Industries Association (RIA) and participates on the ANSI/RIA R15.06 committees, among others.