

# Safe programming and validation of software according to ISO 13849 – Advanced

Safety competence trainings

TRAINING AND EDUCATION

**SICK**

Sensor Intelligence.

# Safe programming and validation of software according to ISO 13849 – Advanced | Safety competence trainings

## TRAINING AND EDUCATION

### Ordering information

| Type                                                                          | part no. |
|-------------------------------------------------------------------------------|----------|
| Safe programming and validation of software according to ISO 13849 – Advanced | 1610759  |

Other models and accessories → [www.sick.com/Safety\\_competence\\_trainings](http://www.sick.com/Safety_competence_trainings)

### Detailed technical data

#### Features

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| <b>Description</b>         | Safety-related controls are being increasingly implemented for new machines and equipment in order to configure the required safety functions in a clear, flexible, space-saving manner. These systems are also used more and more regularly when machines are modernized, thereby replacing the usual safety relays. When programming safety functions, what needs to be taken into account in order to fulfill the requirements in accordance with EN ISO 13849-1 and what is the correct procedure when it comes to validating software? This workshop will clarify sound procedures and general rules. |
| <b>At a glance</b>         | Legal principles of machine-related safety, European directives<br>Principles and terminology of functional safety in accordance with EN ISO 13849<br>Performance level<br>Definition of safety functions<br>Software life cycle<br>Specification and design<br>V model<br>Requirements for software                                                                                                                                                                                                                                                                                                       |
| <b>Your benefits</b>       | Knowledge of the normative requirements according to EN ISO 13849-1<br>Correct configuration of the safety devices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Objectives</b>          | Understanding of the normative requirements for “Safe Software” in accordance with EN ISO 13849-1<br>Safety-related application software (SRASW)<br>Procedure for verifying and validating software: Process and validation plan, software requirements specification (cause-effect matrix), black box test                                                                                                                                                                                                                                                                                                |
| <b>Attendance type</b>     | Face-to-face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Training format</b>     | Classroom training                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Class size</b>          | Upon agreement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Duration</b>            | 2 days                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Level</b>               | Advanced                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Target audience</b>     | Maintenance<br>Designers<br>Application engineers<br>System integrators<br>Developers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Available languages</b> | German<br>English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Certificate</b>         | SICK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Prerequisites</b>       | Basic technical knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

#### Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 25250708 |
| <b>ECLASS 5.1.4</b> | 25250708 |
| <b>ECLASS 6.0</b>   | 25250708 |

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|--------------------|----------|
| <b>ECLASS 6.2</b>  | 25250708 |
| <b>ECLASS 7.0</b>  | 25250708 |
| <b>ECLASS 8.0</b>  | 25250708 |
| <b>ECLASS 8.1</b>  | 25250708 |
| <b>ECLASS 9.0</b>  | 25250708 |
| <b>ECLASS 10.0</b> | 25250708 |
| <b>ECLASS 11.0</b> | 25250708 |
| <b>ECLASS 12.0</b> | 25250708 |
| <b>ETIM 6.0</b>    | EC003015 |
| <b>ETIM 7.0</b>    | EC003015 |
| <b>ETIM 8.0</b>    | EC003015 |

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is “Sensor Intelligence.”**

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)