Standard technology + Safety technology = Integrated safety... ... embedded profitability

Safety Integrated

Answers for industry.

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New regulations and increasing complexity – choose the productive approach of Safety Integrated to fulfill the safety requirements. Safety technology integrated in the standard automation entails the advantages of considerably less engineering expenditures and increased availability. Thus, Safety Integrated offers the easier and faster way to safe and productive machine concepts, both for machine manufacturers and system operators.
Integrated safety technology saves costs

Safety Integrated is the consistent implementation of safety technology in accordance with the concept of Totally Integrated Automation. On the one hand, this refers to the direct integration of safety-related functions in our standard products and, on the other hand, to the consistent and comfortable integration of safety concepts in the standard automation. This offers various advantages both for machine manufacturers and system operators, particularly in terms of efficiency.

Integrated safety allows machine manufacturers to benefit from the decisive competitive advantage of eased engineering. This allows for a considerably faster realization of machines and systems and facilitates their easy adjustability to new requirements.

This concept also bears advantages for system operators as it does not only supports the faster provision of safe machines and systems, but also enhances their productivity. Due to improved diagnostics, a harmonized overall system of safety technology and standard automation reduces downtimes and thus increases the system availability.

As opposed to conventional safety technology, Safety Integrated also facilitates conversion and modernization. On the basis of flexible and modularly expandable concepts, existing machines and systems can be upgraded to state-of-the-art technology. This advantage pays off throughout the entire lifecycle.

“The prevention of accidents must not be understood as a regulation required by law, but as a precept of human responsibility and economic reason.”
Werner von Siemens, 1880
Simply Safe: Detecting, Evaluating, Responding

No matter which safety task you need to perform – our Safety Integrated product portfolio offers the right solution for every application. We offer the suitable equipment for all requirements and provide professional support in the implementation of current standards.

Seamless safety from a single source

Whether you need a simple EMERGENCY-STOP function, the linkage of safety circuits or highly dynamic processes – Safety Integrated facilitates the easy and efficient realization of all conceivable safety tasks, from detecting to evaluating up to reacting. No matter if you opt for a conventional, bus-, control- or drive-based solution.

Our Safety Integrated portfolio offers a seamless product range which covers all safety applications, from tried-and-tested safety functions up to innovative solutions.

Current highlights of our portfolio include the parameterizable SIRIUS 3RK3 modular safety system, which can be flexibly adjusted to various applications; the SIMATIC Mobile Panel 277 IWLAN for wireless operation and monitoring via PROFINET; and our SINAMICS drive range with integrated safety functions. For more information, please see page 14 and the following.
Reduced expenditures and increased efficiency with Safety Integrated

The integration of safety technology into standard automation offers the following sustainable advantages:

### Increased efficiency
- A single system for standard and safety automation minimizes variety of types
- One bus and one engineering system for standard and safety technology reduce costs
- Software solutions allow for an eased reproduction of series machines

### Increased productivity
- Fast troubleshooting and extensive diagnostic functions reduce downtimes
- Fast restart after required system modifications
- Our additionally offered safe and fault-tolerant systems allow for production without downtimes

### Standardization
- Standard and safety technology come with a standardized interface
- Libraries improve re-usability
- Integration reduces the variety of control cabinets for machines
- Bus systems ease the installation technology in systems
Know-how and Support with Standards and Regulations

As a partner for all safety-related concerns, we do not only support you by offering adequate safety-related products and systems. We also provide you with the most current know-how on international standards and regulations. We offer comprehensive training and services for machine manufacturers and system operators throughout the entire lifecycle of safety-related systems and machines.

Know-how for international implementation

For best realization of safety-related tasks, it is essential to comply with the regulations of the country in which the respective machine or system is operated. Sometimes, this seems to be quite challenging. The so-called EU machinery directive for example requires a carefully documented risk assessment and, if necessary, risk minimization of machines prior to their commissioning. Both the machine’s acceptance by a test center as well as the exclusive proof of safety entail increased testing and documentation efforts.

With Safety Integrated, this process is significantly simplified and accelerated. In the planning phase, our portfolio already supports you with products that are consistent with the country-specific regulations, with functional examples, and with know-how of the current standards. In addition, we ease engineering by directly integrating safety technology into standard automation. If required, we offer relevant trainings and services to guide you throughout the entire process right to the point of approval – and beyond.

Global harmonization of standards

To facilitate an even easier and faster realization of future machine concepts and to promote the free exchange of goods on global markets, we have consistently been working on the standardization of safety-relevant standards for many years. This commitment has contributed to the international acceptance of European directives and the harmonization of both international safety standards IEC 61508 and EN 954, which facilitate a more efficient realization of safety tasks by machine manufacturers and system operators.
Reduced risks due to functional safety: the EN 62061 standard

The introduction of the IEC 61508 standard has characterized the term “functional safety,” i.e. the protection against hazards caused by incorrect functions. The new standard EN 62061 “Safety of Machinery – functional safety of electrical, electronic and programmable control systems for machinery” calls for an accurate calculation of failure rates for all relevant electro-mechanical components. For the first time, one standard covers the entire safety chain, from the sensor to the actuator. To attain a safety integrity level such as SIL 3, a certification of the individual components is no longer sufficient. Instead, the safety function must comply with the defined requirements as a whole. For the calculation of the relevant SIL, we offer B10 values for our products. Based on these values, you can calculate the components’ failure rates.

The EN ISO 13489-1 standard

The EN ISO 13849-1 standard “Safety of Machines – Safety-Related Parts of Control Systems, Part 1: General Design Principles” will replace the EN 954-1 standard as per the end of 2009. This standard covers the complete chain of safety functions, dealing with all devices involved in the execution of such functions. The EN ISO 13849-1 also introduces a quantitative assessment of the safety functions. The standard describes the determination of the performance level (PL) for safety-related parts of control systems on the basis of provided architectures for the destined service life. For the combination of multiple safety-related parts in an overall system, the standard specifies calculation data for determination of the resulting PL. The standard may be applied to all safety-related parts of control systems (SRP/CS) and all types of machines, irrespective of the employed technology and energy – be it electrical, hydraulic, pneumatic, mechanical, etc.

For calculation of the correct SIL or PL, we provide you with the required values for our products.

More information on standards is available in our brochure “Functional Safety of Machines and Systems” as well as in our courses listed at www.siemens.com/sitrain-safetyintegrated.
**Always By Your Side: Support Throughout the Entire Lifecycle**

With our innovative and comprehensive safety technology product portfolio as well as competent support services, we provide substantial advantages – throughout all phases of the product lifecycle. For example in the realization of safety plans in accordance with IEC 62061.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Services*</th>
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<tbody>
<tr>
<td>Prior to developing a machine, the machine manufacturer is required to perform a risk analysis in consideration of all relevant standards. This identifies the hazards emanating from the machine as well as the required protection measures.</td>
<td><strong>Services</strong>*</td>
</tr>
<tr>
<td>The risk analysis shows which components are required to protect the hazardous areas. A proof of safety is required for the machine’s CE marking.</td>
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<tr>
<td><strong>Services</strong>*</td>
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</table>
| - Comprehensive training programs  
- Planning and conceptual design support  
- Consulting on application/interpretation of safety-relevant directives and standards  
- Interface reduction: all system components and a broad service portfolio from a single source | - Installation and commissioning  
- Support in the preparation of machine acceptance |

<table>
<thead>
<tr>
<th>System advantages</th>
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<td><strong>System advantages</strong></td>
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</table>
| - Solution approaches based on innovative technologies  
- Globally applicable products and systems with the required approvals and in compliance with the EU directives | - Space-, time- and cost-saving design due to the integration of safety technology into standard automation  
- Fast commissioning as a result of comprehensive diagnostics as well as pre-wired and certified components |

* These services can be rendered directly by Siemens or by certified Siemens Solution Partners.
Safety plan – the guideline for the realization of safe machines

The structure of the safety plan as well as the respective compliance obligation are defined in the IEC 62061 standard. It supports you in the definition and implementation of all safety-relevant aspects and regulations for the construction and operation of a safe machine – throughout all phases of the product lifecycle.

Due to the systematic approach required by the safety plan, you are not only provided with a maximum degree of safety, but you can also benefit from considerable time savings over all phases – also with regard to the machines’ CE marking.

Operation and servicing

The operator has to observe the framework directive on industrial safety as well as the documentation on compliance with the machinery directive, which has to be prepared by the machine manufacturer.

- Global presence due to on-site service
- Fast delivery of spare parts for low capital commitment
- TÜV-compliant operating manuals (German technical control board)

Maintenance

Maintenance measures have to be carried out as fast as possible to keep downtimes at a minimum. Since, for competitive reasons, production must not be stopped – or at least quickly be restarted – faults have to be remedied as fast as possible.

- Stop-time measurement of non-contact sensors
- Regular renewal of safety-relevant components
- Global presence thanks to on-site service
- Fast spare parts delivery for low capital commitment

Modernization and upgrade

In order to upgrade existing systems to state-of-the-art safety technology, expansion or modernization measures will be necessary. We help you to optimally comply with all current safety requirements by means of tests, consulting and the definition of measures aimed at the rectification of deficiencies.

- Concepts for modernization as well as their implementation in accordance with your requirements and state-of-the-art technology
- Efficient system concepts
- Interface reduction: all system components and a broad service portfolio from a single source
- Comprehensive training programs

- Increased productivity due to fast fault diagnostics and rectification as a result of the integrated concept
- Eased handling due to a uniform operating concept
- Reduced downtimes as a result of high product quality and availability

- Fast fault diagnostics and troubleshooting due to the Safety Integrated concept
- Long-term availability of components
- Easy expandability as a result of integration in the Totally Integrated Automation architecture
- Long product availability
Safe Communication Made Easy: Innovative Solutions

For failsafe communication, Safety Integrated uses both the tried-and-tested field bus systems AS-Interface and PROFIBUS as well as the innovative Industrial Ethernet standard PROFINET, which allows for new approaches to safe and efficient machines and systems – such as wireless failsafe communication via IWLAN.

Opt for efficiency: PROFINET, PROFIBUS and AS-Interface
With all communication solutions, the safety-relevant data are transmitted via the already available standard bus to allow for significant savings in terms of installation and engineering. Safe I/O modules can be combined with standard modules, safe data for diagnostic purposes can be re-used on the standard level and safe components of other manufacturers can easily be connected.

Satisfy high demands easily: PROFIsafe
PROFIsafe® was the first communication standard in accordance with IEC 61508 to allow for the transmission of standard and safety-related communication on a single bus cable. The advantage: Retrofitting is extremely easy as the existing wiring can be further used. For safe communication, PROFIsafe uses the PROFINET and PROFIBUS services. PROFINET and PROFIBUS with PROFIsafe meet highest demands up to category 4 in accordance with EN 954-1 and SIL 3 in accordance with IEC 61508. Thus, they are optimally suited for application in the production and process industry.

Flexible and multifunctional: SIRIUS 3RK3 Modular safety system
The Modular safety system is suitable for both individual applications as well as for comprehensive safety applications. The central module, which can be optimally adjusted to the respective application via expansion modules, forms the core of the flexible and multifunctional system. With the aid of the MSS ES software, safety functions can easily and rapidly be parameterized. For improved system diagnostics, the system can furthermore be connected to PROFIBUS. The SIRIUS MSS can be employed in safety applications up to category 4 in accordance with EN 954-1 or SIL 3 in accordance with IEC 61508/62061 and reaches Performance Level e in accordance with EN ISO 13849-1.

Easy and safe connection: ASIsafe
ASIsafe® is the safety-related version of the AS-Interface system. It allows for the integration of safety-related components such as EMERGENCY-STOP units, safety position switches, light curtains and grids and laser scanners in AS-Interface. As with standard components, the connection is easy and rapidly realized via the yellow AS-Interface cable. Safe stations are installed and operated in a mixed network with the standard I/O modules. As isolated solution, safe stations can be operated with a safety monitor on the standard AS-i master under a standard PLC (ASIsafe Solution local). Or – as an overall, system-wide ASIsafe integration – with the help of the DP/AS-i F-Link under a failsafe control (ASIsafe Solution PROFIsafe).

Efficient and user-friendly: SIRIUS safety relays
SIRIUS safety relays form essential components of the seamless Safety Integrated portfolio. The innovative switching devices analyze safety-related signals of sensors and automatically disconnect them in case of danger. With a broad portfolio – from efficient standard devices up to highly flexible multifunction units – they cover various fields of application, e.g. EMERGENCY-STOP disconnection, protective door monitoring and perfect protection of punches and presses. Integrated diagnostic tools and monitoring systems allow for fast troubleshooting, reduce downtimes and therefore ensure increased availability of machines and systems.
Control-based safety concept at Michelin Kronprinz

The leading manufacturer of truck steel wheels had to retrofit its rim profiling line in a way which ensured compliance with safety category 4 in accordance with EN 954. As accurate planning in advance is rarely possible, the company opted for a flexible control-based solution.

The solution
The SIMATIC S7-315F is the core of the safety concept, which was established in parallel with the existing line control. The connection of failsafe signals is realized via ET 200S.

The advantages
- Comprehensive diagnostic options allow for maximum flexibility
- The visualization of all states during commissioning saves time
- The performance gain compensates the slightly higher investment costs as of two protective circuits

Flexible safety concept for cutting systems

The new Duojet water jet cutting system of Frimo-Heidel Viersen, a renowned manufacturer of punching machines, required an adjustable safety concept and is now equipped with ASIsafe. The short response times of the bus not only allowed for the optimization of the entire stepping-behind protection area, but also considerably reduced the required space.

The solution
A SIMATIC S7-314 2DP controls the cell with the water jet cutting robots and the turntable. Via PROFIBUS, the control is connected to a DP/AS-i-Link which monitors all slaves as AS-i master. Standard and safety-oriented signals, which are monitored by four safety monitors, are transmitted on the same AS-i string. In case of danger, the turntable, which is driven with 20 kW and weights one ton, stops within only one second.

The advantages
- Easy installation and engineering
- Short response times
- Comprehensive diagnostic options
- Flexible and modular expandability

3-in-1 concept for planing and molding machines

Heinrich Kuper GmbH & Co. KG located in Rietberg near Bielefeld, a renowned manufacturer of wood processing machines, very individually adjusts its safety concept to the individual machines' requirements. For the new generation of planing and molding machines, the company employs a simple but effective safety concept based on the SIRIUS 3TK28 multifunction device.

The solution
The SIRIUS 3TK2845 safety relay protects the planing and molding machines in a multiple manner as it combines three functions in a single device: EMERGENCY-STOP, hood monitoring as well as set-up operation via key switch.

The advantages
- Considerably reduced wiring effort
- Simple and efficient construction
- Key switch function for switchover between set-up and normal operation
Control-/drive-based safety concept at Geiss

The mechanical engineering company Geiss has developed a globally unique vacuum molding system. The gantry line, which spans 18 m, accommodates three aggregates: loader, miller and unloading unit. The highly dynamic drives reach speeds of up to 100 m/min. This requires a flexible safety concept with minimum response times.

The solution
The safety functions were integrated in a CNC SINUMERIK 840 D powerline and in the SIMODRIVE 611 digital drive.

The advantages
- Very fast and differentiated response options and safe monitoring of speeds, downtime and position
- Flexible coupling of safety-relevant signals due to integrated “safe programmable logic”
- Considerably simplified system infrastructure due to minimum hardware and wiring

SIMATIC Safety Integrated with PROFINET employed in the radiator production of Volkswagen, Germany

The automation initiative of German automotive manufacturers (AIDA) will increasingly employ PROFINET with integrated personal protection as the standard procedure of Industrial Ethernet in the future. The goal of AIDA, whose members include Audi, BMW, Daimler and VW, is an easy and uniform connection of the employed automation components. In its Hanover works, Volkswagen AG operates a fully automated production line for water radiators which proves that distributed system configurations with integrated safety can be realized on the basis of PROFINET I/O – offering maximum product quality and process safety.

The solution
The communication with the distributed I/O is realized via PROFINET with integrated safety technology. The individual failsafe modules of the ET 200S communicate via PROFINET I/O with the central system control CPU 416-F-2DP with CP-433-1 Advanced of the SIMATIC S7-400F range via PROFIsafe. The SIMATIC Panel PC 670 for operating and monitoring tasks is also connected to the control via PROFINET.

The advantages
- Significantly improved transmission performance
- Effective data archiving
- Real-time capability and pulse synchronism by means of IRT (Isochronous Real Time) technology
## Products

<table>
<thead>
<tr>
<th>Products</th>
<th>SIMATIC Sensors Light barriers</th>
<th>SIMATIC Sensors Light curtains</th>
<th>SIMATIC Sensors Laser scanners</th>
<th>SIRIUS Position switches, Hinge switches, Short-stroke switches, Magnetically operated switches (contact-free)</th>
</tr>
</thead>
</table>

### Approval

- Cat. 2 and 4 in acc. with EN 954-1 or type 2 and 4 in acc. with IEC/EN 61496
- Cat. 2 and 4 in acc. with EN 954-1 or type 2 and 4 in acc. with IEC/EN 61496
- Up to cat. 3 in acc. with EN 954-1 or type 3 in acc. with IEC/EN 61496
- Up to 4 in acc. with EN 954-1
- Up to SIL 3 in acc. with IEC 61508
- Up to PL e in acc. with EN ISO 13849-1

### Application/safety function

- Electro-sensitive protective equipment for the protection of hazardous areas, hazardous locations and access points
- Electro-sensitive protective equipment for the protection of hazardous areas
- Electro-sensitive protective equipment for the protection of hazardous areas
- For the mechanical monitoring of protective equipment and protective door interlockings
  - Particularly failsafe and highly available due to specifically developed, integrated circuits (ASICs) and intelligent evaluation method
  - Extended functionalities: blanking, muting, clock control
  - Vertical and horizontal protection
  - Flexible protection field parameterization

### Failsafe communication options

- AS-Interface (ASIsafe) and PROFIBUS with PROFIsafe profile
- AS-Interface (ASIsafe) and PROFIBUS with PROFIsafe profile
- AS-Interface (ASIsafe)
<table>
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<tr>
<th>SIRIUS EMERGENCY-STOP switches, Cable-operated switches, Two-hand operation consoles, Foot switches, Signaling columns and integrated signal lamps</th>
<th>ASIsafe safety modules</th>
<th>DP/AS-i F-Link (ASIsafe Solution PROFIsafe)</th>
<th>SIMATIC Mobile Panel 277F IWLAN</th>
<th>SIRIUS 3TK28 safety relays</th>
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**EMERGENCY-STOP applications in the production and process industry; state signaling on machines and systems**

- Safe detection of mechanical and electro-sensitive protective equipment for safety applications in production automation (exception: safe drives)
- Safe gateway for transfer of ASIsafe signals to the PROFIsafe telegram for safety applications in production automation
- Safe gateway for transfer of ASIsafe signals to the PROFIsafe telegram for safety applications in production automation
- Monitoring of protective equipment, e.g. EMERGENCY-STOP commanding devices, position switches and non-contact sensors; safe motion monitoring (e.g. safe standstill monitoring)

**Safety functions:**
- EMERGENCY-STOP button
- Two acknowledgement buttons (right/left)
- Transponder identification and distance measuring for safe registration and operation

**AS-Interface (ASIsafe)**

- Monitoring of protective equipment, e.g. EMERGENCY-STOP commanding devices, position switches and non-contact sensors; safe motion monitoring (e.g. safe standstill monitoring)

**AS-Interface (ASIsafe) and PROFIBUS with PROFIsafe profile**

**PROFINET with PROFIsafe profile**
<table>
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<tr>
<th>ASIsafe safety monitor (ASIsafe Solution local)</th>
<th>SIRIUS 3RK3 modular safety system</th>
<th>Safety Unit TM121 C</th>
<th>SIMATIC controls</th>
<th>SIMATIC I/O</th>
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All safety applications in production automation:
- Safe detection of mechanical and electro-sensitive protective equipment, incl. disconnection on 1-2 enabling circuits
- Optional control of distributed outputs, e.g. safety valves or motor starters
- Coupling of two ASIsafe networks

Modular, parameterizable safety system for all safety applications in production automation:
- Safe evaluation of mechanical and electro-sensitive protective equipment
- Integrated diagnostic function
- Integrated signal test and discrepancy time monitoring

Parameterizable motion control compact device for motion monitoring, application in presses, forming technology

Safety functions:
- Two-hand and foot operation
- Monitoring of EMERGENCY-STOP, light curtain
- Protective door and protective grid monitoring
- Safe mode selector switch
- Control of safety valves
- Motion monitor control

Scalable, fail-safe systems
- ET 200S F-CPU
- S7-300F
- S7-400F

Safety functions:
- Integrated diagnostic function and self-test routine
- Flexible transfer to and maintenance of a safe application state in case of faults
- Coexistence of standard and failsafe programs in one CPU
- Pre-fabricated, TÜV-certified safety modules also for press and burner applications
- Software:
  - STEP 7 FBD, LAD, S7 Distributed Safety

Scalable and redundant I/O systems
- ET 200eco
- ET 200M
- ET 200S
- ET 200pro

Safety functions:
- Integrated signal test and discrepancy time monitoring
- One distributed I/O system with standard and failsafe input and output modules
- Configuration of signal test and discrepancy time visualization with STEP 7

AS-Interface (ASIsafe Solution local) | Diagnostics via PROFIBUS | RS232 | PROFINET/PROFIBUS with PROFIsafe profile | PROFIBUS with PROFIsafe profile: all systems PROFINET with PROFIsafe profile: ET 200S, ET 200pro |
**Motor starters for:**
- ET 200S (IP20)
- ET 200pro (IP65)

**Frequency converters for:**
- ET 200S
- ET 200pro FC

**Frequency converters**
1) SINAMICS G120
2) SINAMICS G120D

**SINAMICS S120 drive system**

**SINUMERIK 840D**

<table>
<thead>
<tr>
<th>Motor starters for:</th>
<th>Frequency converters for:</th>
<th>Frequency converters</th>
<th>SINAMICS S120 drive system</th>
<th>SINUMERIK 840D</th>
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<td>• ET 200S (IP20)</td>
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<td>• ET 200pro FC</td>
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**Up to cat. 4 in acc. with EN 954-1**
**Up to SIL 3 in acc. with IEC 61508**
**NFPA 79, NRTL-listed**

**Up to cat. 3 in acc. with EN 954-1**
**Up to SIL 2 in acc. with IEC 61508**
**NFPA 79, NRTL-listed**

**All safety applications in production automation and distributed drive tasks as in conveyor technology or lifting drives**
- Starting and safe disconnection with conventional and electronic switching technology
- Integrated motor protection
- Safe selective disconnection (ET 200S)

**System-integrated, central drive (frequency converter) on standard asynchronous motors without encoders**

- Integrated, autonomous safety functions:
  - Safe torque off
  - Safe stop 1
  - Safely limited speed

**1) Modular, central, safe frequency converter**
**2) Distributed frequency converter on standard asynchronous motors without encoders**

- Integrated, autonomous safety functions:
  - Safe torque off
  - Safe stop 1
  - Safely limited speed
  - Safe brake control (only G120)

**Drive system for high-performance motion control tasks in machine and system production, e.g. for packing or plastic machines, presses, punches or handling devices**

- Integrated, autonomous safety functions:
  - Safe torque off
  - Safe stop 1 and 2
  - Safe operational stop
  - Safely limited speed
  - Safe brake control

**Numeric control with integrated safety technology in control and drive for machine tools, e.g. for protection during set-up operation**

- Safety functions:
  - Safe torque off and safe operational stop
  - Safely limited speed
  - Safe software limit switches and cams
  - Safe programmable logics
  - Safe brake management
  - Integrated acceptance test

**Solution PROFIsafe: PROFIBUS/PROFINET with PROFIsafe profile**
**Solution local: on-site safety application**

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<th>PROFIBUS/PROFINET with PROFIsafe profile</th>
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Service and Support

Easy download of catalogs and information material

The latest catalogs, customer magazines, brochures, demo software and special bargain packages are available for order or download from our Information and Download Center. Amongst others, also our “Safety Integrated” catalog is available here.

www.siemens.com/safety
-> Support
-> Information material

Newsletter

Always up-to-date: our regular newsletter provides you with topical information on the subject of safety technology. Simply register at:

www.siemens.com/safety
-> News center
-> Newsletter

Configurators for easy handling

Our configurator selection is available at:
http://mall.automation.siemens.com
-> Configurator list

Online support

Technical data, FAQs, documentation and much more – accessible anytime and worldwide:

http://support.automation.siemens.com

E-business

24/7-access to a comprehensive information and order platform for products and systems from our safety technology portfolio? Comprehensive information on our complete portfolio? Product selection, order tracking, service, support and training information? All of this can easily be found in our Mall at:

http://mall.automation.siemens.com
Training

Our training centers at numerous sites worldwide offer individual training programs covering all fields of automation and industrial solutions. Specifically for the subject of safety technology, we offer courses on the current standards and our broad product and solution portfolio.

More information on our comprehensive SITRAIN training program is available for download at: www.siemens.com/sitrain-safetyintegrated

Or contact us personally:
- Via information hotline: +49 1805 25 36 11
- Or fax: +49 1805 23 56 12

Online support

Our online support provides a comprehensive information platform covering documentations, applications, tools and FAQs. In addition, it offers the option of submitting support requests as well as access to the technical forum: http://support.automation.siemens.com

Technical Support

We offer global support in the respective national language to provide you with answers to technical questions as well as information on spare parts, repairs and service contracts.
- Personally via telephone support: +49 180 50 50 222
- Via fax: +49 180 50 50 223
- Via online support request: www.siemens.com/automation/support-request

The experts of our Technical Assistance will be pleased to help you with any questions pertaining to Low-Voltage Controls and Distribution:
- Personally from Monday to Friday, 8.00 am to 5.00 pm (CET) via telephone support: +49 911 895-5900
- Via e-mail: technical-assistance@siemens.com
- Via fax: +49 911 895-5907

Competent on-site support: Solution Partners

To master the increasing requirements in the field of safety technology, Siemens also relies on selected “Siemens Solution Partners Automation.” These highly qualified partner companies provide professional consulting services and effective support for all relevant safety aspects of your automation projects. www.siemens.com/automation/solutionpartner

Commissioning/operation  Service  Training
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