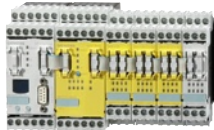


Introduction

SIRIUS Safety Integrated		Order No.
 3SK1 11.	3SK1 safety relays • Key modules of a consistent and cost-effective safety chain • Can be used for all safety applications thanks to compliance with the highest safety requirements (PL e according to EN ISO 13849-1 or SIL 3 according to IEC 61508) • Suitable for use all over the world through compliance with all globally established certifications <u>Standard basic units</u> • Simple, compact devices for all important requirements for monitoring safety sensors and actuators	3SK1 11
	<u>Advanced basic units</u> • Multi-functional series of safety relays with relay enabling circuits, semiconductor outputs, or time-delayed outputs for: - EMERGENCY-STOP monitoring - Protective door monitoring - Monitoring of non-floating sensors such as light arrays, laser scanners, etc. - Monitoring of two-hand operation consoles - Monitoring of equivalent (NC/NC) and antivalent (NO/NC) sensors • Setting by means of DIP switch	3SK1 12
	<u>Expansion units</u> • The 3RO and 4RO output expansions can be used for Standard and Advanced basic units • Input expansion for Advanced basic units • Power supply for Advanced basic units • Expansion of the Standard device series by means of wiring • Expansion of the Advanced device series by means of wiring or without wiring effort by means of 3ZY1 2 device connector	3SK1 21, 3SK1 22, 3SK1 23
 3TK28 26-2BB40	3TK28 safety relays • Key modules of a consistent and cost-effective safety chain • Can be used for all safety applications thanks to compliance with the highest safety requirements (PL e according to EN ISO 13849-1 or SIL 3 according to IEC 61508) • Suitable for use all over the world through compliance with all globally established certifications <u>Safety relays with relay enabling circuits</u> • Different voltages can be switched through the floating contacts • Inductive currents up to 5 A can be switched with relay contacts	3TK28 2, 3TK28 3
	<u>Safety relays with electronic enabling circuits</u> • Wear-free • Suitable for operation in fast switching applications • Insensitive to vibrations and dirt • Good electrical endurance	3TK28 4
	<u>Safety relays with contactor relay enabling circuits</u> • Different voltages can be switched through the floating contacts • Inductive currents up to 10 A can be switched with contactor relay enabling circuits • High mechanical and electrical endurance	3TK28 5
 3TK28 41-1BB40	<u>Safety relays with special functions</u>	3TK28 10
	3TK28 10-0 safe standstill monitoring • Monitoring without external sensors • Universal use in applications possible 3TK28 10-1 safe speed monitoring • Monitoring of speed with encoders and proximity switches possible • Easy diagnostics options via display • Integrated monitoring of a spring-locked protective door	
 3TK28 10-1BA41		

SIRIUS Safety Integrated (continued)

Order No.



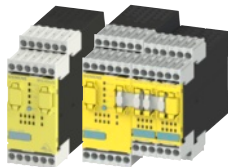
3RK3

3RK3 Modular Safety System (MSS)

- Freely configurable modular safety relays
- Safety-oriented applications up to PL e according to EN ISO 13849-1 or SIL 3 according to IEC 62061 can be implemented
- High flexibility and planning reliability thanks to a modular design
- More space in the control cabinet and lower costs thanks to highly modular project data
- More functionality and time savings thanks to a software-configurable system
- Comprehensive diagnostics on-site with the MSS ES software
- Improved plant diagnostics and higher plant availability thanks to exchange of data using PROFIBUS
- Automatic creation of plant documentation with regard to MSS and software parameterization
- Up to 9 expansion modules can be plugged in for standard I/Os and fail-safe I/Os – optionally solid-state or relay-based fail-safe outputs
- Graphic parameterization of the logic, online diagnostics, and automatic creation of documentation using MSS ES
- Consistent further development of the safety monitors with the Advanced and ASIsafe central units of the SIRIUS 3RK3 Modular Safety System (MSS)

Additionally with AS-Interface (ASIsafe):

- With MSS Advanced/ASIsafe up to 50 two-channel, fail-safe outputs (38 central outputs and 12 outputs via AS-i)
- Safety-oriented and standard communication between multiple MSS devices and/or safety monitors
- Distributed detection of sensors and disconnection of actuators through AS-Interface
- Much more space is available without wiring outlay using AS-Interface
- Ready-to-use function blocks (e.g. muting or protective door with tumbler) can also be used on AS-i



3RK3 MSS ASIsafe



Safety monitor

AS-Interface safety monitors

- Monitoring of the safe stations and linking of safe AS-Interface inputs and outputs

3RK3

3RK1

AS-i F-Link

- Monitoring the inputs of safety-oriented digital AS-i slaves (ASIsafe slaves) and forwarding of data through PROFIsafe
- Supports all AS-Interface master functions according to the AS-Interface Specification V3.0
- Local diagnostics using LEDs and display with control keys
- Programming with Distributed Safety Version V5.4 SP1 or higher for SIMATIC S7-300F/416F
- Programming with SAFETY INTEGRATED "SI-Basic" or "SI-COMFORT NCU" for SINUMERIK 840D pl/sl



ASi F-Link

3RK3

AS-Interface safety modules

- Complete portfolio of ASIsafe modules
- Up to four safe inputs per module
- Up to one safe output per module

Advantage: Easy integration of safe signals in the control cabinet or in the field up to Category 4, PL e, SIL 3



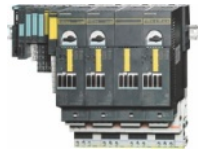
K45F

3RK1

Introduction

SIRIUS Safety Integrated (continued)

Order No.



ET 200S Safety

ET 200S Safety Motor Starter Solutions

The ET 200S Safety Motor Starter Solutions comprise:

- Safety modules
- Standard motor starters
- High Feature motor starters
- Failsafe motor starters

ET 200S Safety Motor Starter Solutions Local

Safety Motor Starter Solutions Local are preferred from the safety technology point of view for locally restricted safety applications. These motor starters are not dependent on a safe control system.

ET 200S Safety Motor Starter Solutions PROFIsafe

Safety Motor Starter Solutions PROFIsafe are often found by contrast in safety applications of the more complex type that are interlinked. In this case a safe control system is used with the PROFINET or PROFIBUS bus systems with the PROFIsafe profile.

3RK3



ET 200pro Safety

ET 200pro Safety Motor Starter Solutions

The ET 200pro Safety Motor Starter Solutions comprise:

- PROFIsafe modules
- Safety repair switch modules
- Disconnecting modules
- Standard motor starters
- High Feature motor starters

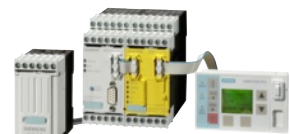
ET 200pro Safety Motor Starter Solutions Local

Safety Motor Starter Solutions Local are preferred from the safety technology point of view for locally restricted safety applications. These motor starters are not dependent on a safe control system.

ET 200pro Safety Motor Starter Solutions PROFIsafe

Safety Motor Starter Solutions PROFIsafe are often found by contrast in safety applications of the more complex type that are interlinked. In this case a safe control system is used with the PROFINET or PROFIBUS bus systems with the PROFIsafe profile.

3RK3



3UF7

SIMOCODE pro motor management and control devices

- Flexible, modular motor management system for motors with constant speeds in the low-voltage range
- Provides an intelligent interface between the higher-level automation system and the motor feeder
- Multi-functional, electronic full motor protection which is independent of the automation system
- Integrated control functions for the motor control
- Detailed operating, service and diagnostics data
- Open communication through PROFIBUS DP and PROFINET
- Safety relay function for the fail-safe disconnection of motors up to SIL 3 (IEC 61508/IEC 62061) or PL e with Category 4 (EN ISO 13849-1)

Fail-safe digital modules

- DM-F Local for direct assignment between a fail-safe hardware shutdown signal and a motor feeder
- DM-F PROFIsafe if a fail-safe controller (F-CPU) generates the fail-safe signal for the disconnection

3UF7



3SE6 3

Non-contact RFID safety switches

- Long service life due to non-contact switching
- Only one switch required for the maximum safety level PL e or SIL 3 according to EN ISO 13849-1 and IEC 61508
- Safety circuits connected in series, with up to 31 devices
- Higher tamper protection than with mechanical safety switches due to switches and actuators that can be individually coded
- Version with optional 18 N magnetic catch
- LED status display including threshold indication for door displacement
- Degree of protection up to IP69 K and resistance to detergents
- Larger switching displacement than mechanical switches; offers better mounting tolerance and sagging tolerance of the protective door
- No time-consuming mechanical installation needed, resulting in shorter installation and adjustment times and reduced maintenance

3SE6 3

SIRIUS Safety Integrated (continued)

Order No.



3SE5 1

Mechanical position switches

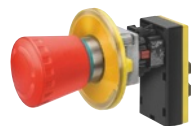
- Easy assembly thanks to modular design
- Solid, rugged design
- Special versions can be generated easily and are available quickly, also in combination with standard modules
- With a 3SE51/3SE52 position switch it is possible to achieve Category 2 according to EN ISO 13849-1 or SIL 1 according to IEC 61508
- Categories 3 and 4 can be achieved by using a second 3SE5 1/3SE5 3 position switch

3SE5 1,
3SE5 2

3SE5 3

Mechanical safety switches

- With separate actuator, hinge switch, or separate actuator and tumbler
- With a position switch it is possible to achieve Category 3 according to EN ISO 13849-1 or SIL 2 according to IEC 61508
- Category 4 according to EN ISO 13849-1 or SIL 3 according to IEC 61508 can be achieved by using a second 3SE5 1 or 3SE5 2 position switch
- Version in various sizes made of metal or plastic
- Integrated ASIsafe electronics for all enclosure designs

3SE5 1,
3SE5 2,
3SE5 3

3SB3/3SF5

Command devices

- Using a special F adapter, EMERGENCY-STOP mushroom pushbuttons according to ISO 13850 can be directly connected through the standard AS-Interface with safety-oriented communication. This F adapter is snapped from the rear onto the EMERGENCY-STOP command device, enabling maximum performance level "e" according to EN ISO 13849-1 or SIL 3 according to IEC 62061 to be achieved.
- EMERGENCY-STOP command devices for disconnecting systems in an emergency situation
- With positive latching function according to EN ISO 13850 and performance level "e" according to EN ISO 13849-1 or SIL 3 according to IEC 62061
- Various mushroom diameters, with lock, in plastic/metal, as individual or complete units and in combination with 3SB3 enclosure or two-hand operation console

3SF5

3SB3



3SB3

Cable-operated switches

- Control functions and EMERGENCY-STOP are always within reach
- More safety over long distances of up to 2 x 75 m length
- Simple unlocking
- Fail-safe applications with SIRIUS Safety Integrated
- Status display directly on the switch
- Signal display for large distances with innovative LED technology with visibility over 50 m
- Pull switches with latching function according to ISO 13850 (EN 418) and full EMERGENCY-STOP function with positive-opening contacts
- Quick and safe mounting using uniform mounting accessories
- Versions with 1 NO contact/2 NC contacts with yellow lid

3SE7



3SE7