

The image features a collection of Siemens SIRIUS Safety Integrated components, including safety relays, modules, and a terminal block, arranged on a dark blue grid background with binary code (0s and 1s) and technical standards text. The components are primarily yellow and grey. A large teal banner is overlaid at the bottom, and a white Siemens logo box is in the top right corner.

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SIRIUS Safety Integrated

general overview

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[siemens.com/safety-sirius](https://www.siemens.com/safety-sirius)

Learning Objectives

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1 Detection – safe sensors (SIRIUS command)

2 Evaluation (SIRIUS monitor)

3 Reaction (SIRIUS hybrid and SIRIUS control)

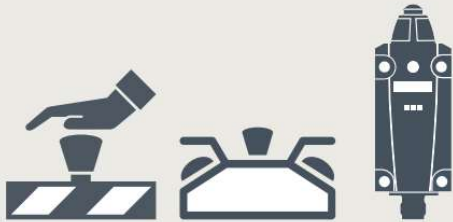
4 Communication (SIRIUS monitor)

SIRIUS Safety Integrated Portfolio

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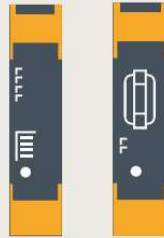
Detecting

Sensors



Evaluating

Safety Relays
or F-PLCs



Reacting

Actuators



SIRIUS Safety Integrated Portfolio

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A worker in a white hard hat and a yellow safety vest is holding a tablet computer. He is standing in a factory environment. In the background, there is a large industrial robotic arm. The scene is overlaid with digital graphics, including a large blue screen displaying data and code, and several horizontal yellow laser lines representing safety sensors. The Siemens logo is visible in the top right corner.

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**Detection –
safe sensors**

Detection

SIRIUS Command - Safe Sensors

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Safe sensors (SIRIUS Command)



Commanding devices

SIRIUS ACT 3SU1

- EMERGENCY STOP mushroom pushbutton
- Two-hand control panel
- SIRIUS ACT PN

Position and safety switches

Mechanical switches 3SE5

- Separate actuator
- Tumbler
- Hinge switches

Non-contact switches 3SE6

- Magnet 3SE66/67
- RFID 3SE63

Special sensors

- Cable-operated switches 3SE7
- Foot switches 3SE2/3SE3

Detection

SIRIUS Command - Safe Sensors

Commanding devices – SIRIUS ACT



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SIRIUS ACT 3SU1

Emergency stop pushbuttons

- Turn-to-Release / rotate to unlatch
- Key-Operated-Release
- Tension Release (Pull to unlatch)

SIRIUS ACT ID

- For 50 and more authorizations

Two-Hand Operations Consoles

Standard

- 2 mushroom pushbuttons (1xNO+1xNC)
- 1 EMERGENCY STOP (2xNC)

Additional

- 8 additional reference holes for command devices
- 4 additional drilled holes for command devices

SIRIUS ACT PN

- SIRIUS ACT with PROFINET:
Standard interface module
- 1 to 20 terminal modules connectable
- with additionally 1 DQ + 4 DI + 1 AI

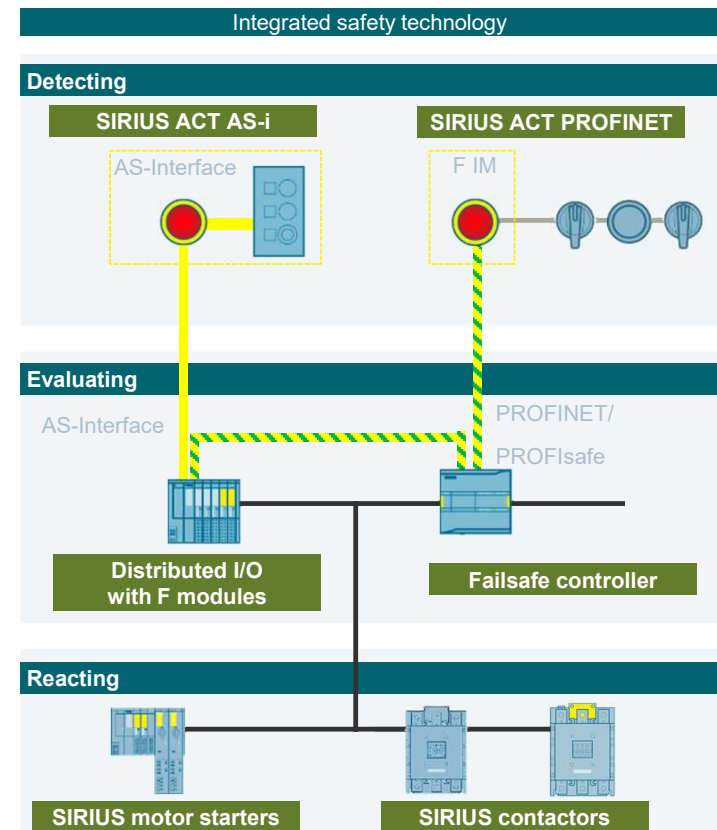
Detection

SIRIUS ACT - is part of integrated safety technology

Customer benefits

- Reduces components and wiring
- Extended diagnostic capabilities
- Integrated in the TIA Portal
- Quick creation of reports and determination of the safety integrity level (SIL) and the performance level (PL) achieved via TIA Selection Tool
- [FAQ AS-i Diagnostics for CM AS-i Master and F-CM AS-i Safety ET 200SP](#)

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Detection

SIRIUS Command - Safe Sensors

Position and safety switches

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Mechanical position switches

SIRIUS 3SE51/3SE52

- Basic position switches (standard)

SIRIUS 3SE54

- Position switch with compact design (compact)

Mechanical safety switches

SIRIUS 3SE22/3SE51/3SE52

- With separate actuator or
- Hinge switches

SIRIUS 3SE53

- With tumbler

SIRIUS 3SF1

- AS-Interface

Non-contact safety switches 3SE6

SIRIUS 3SE66/67

- Magnet switch 3SE66
- Solenoid 3SE67 („counterpart“)

SIRIUS 3SE63

- RFID

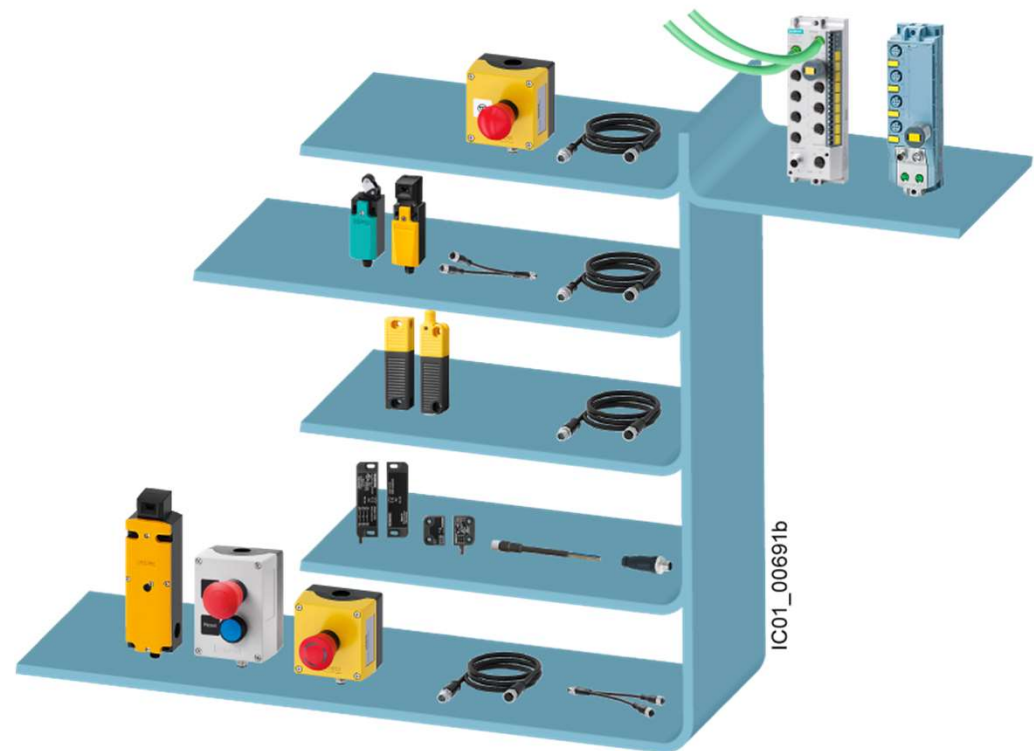
Detection

Safety cabling in the field with IP67

SIRIUS sensors and failsafe SIMATIC ET 200eco PN and ET 200AL

- Field modules pass signals to the higher level controller
- Solutions with IP65/67 for harsh environment and advanced requirements
- Connection via PROFINET/ PROFI-safe
- Machine producer can save time and material on wiring
- Space saving in the cabinet through decentralized IO

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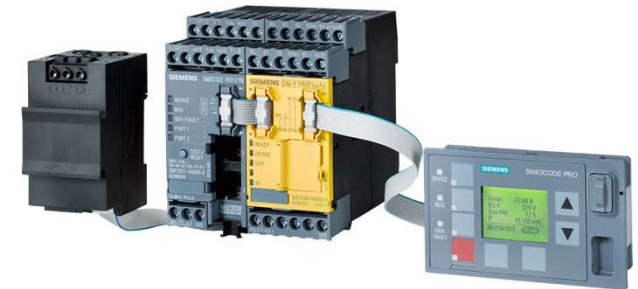
Evaluation

Evaluation

SIRIUS Safety Integrated Portfolio

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SIRIUS Monitor



SIRIUS 3SK1 safety relays

- Standard basic unit 3SK1
- Advanced basic unit 3SK1
- Input expansion 3SK122

- Output expansion 3SK121 and coupling relays 3RQ1
- Failsafe motor starter 3RM1

SIRIUS 3SK2 safety relays

- Basic unit 3SK2
- Interface module 3SK25 (PROFINET) & 3RK35 (PROFIBUS)

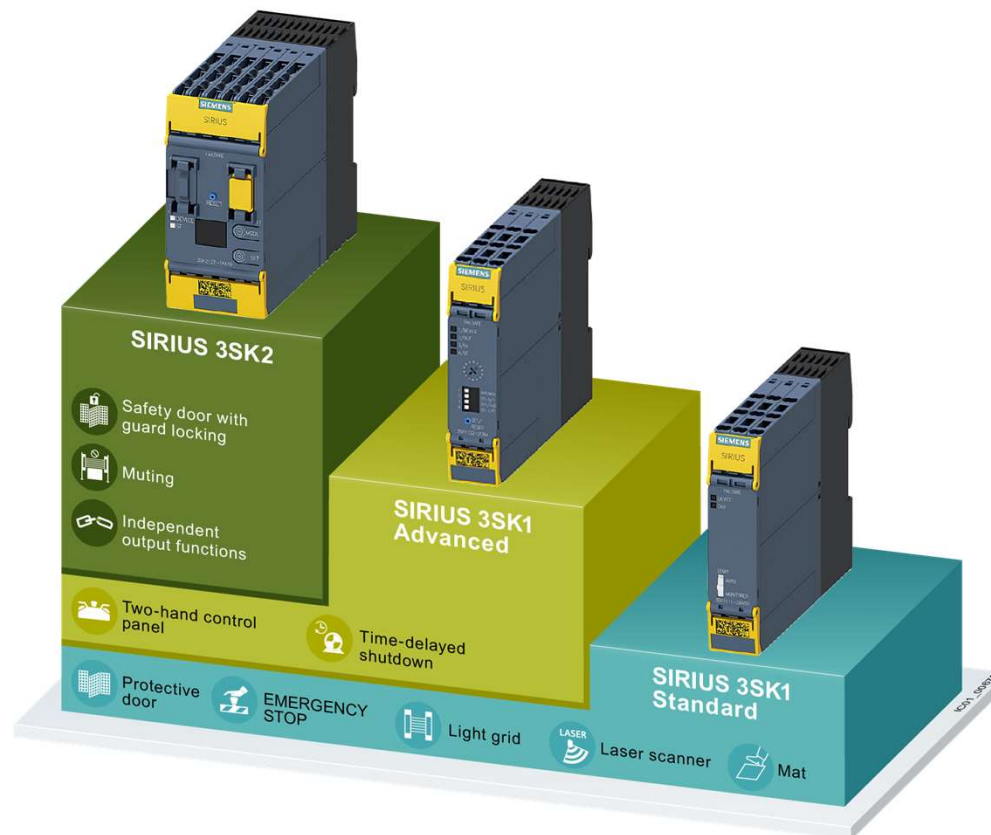
SIMOCODE pro V 3UF7

- Basic units 3UF70
- Measuring module 3UF71
- Operator panel 3UF72
- Digital/analog module 3UF73/74
- Ground fault module 3UF75
- Multifunctional module 3UF76
- Temperature module 3UF77

Evaluation

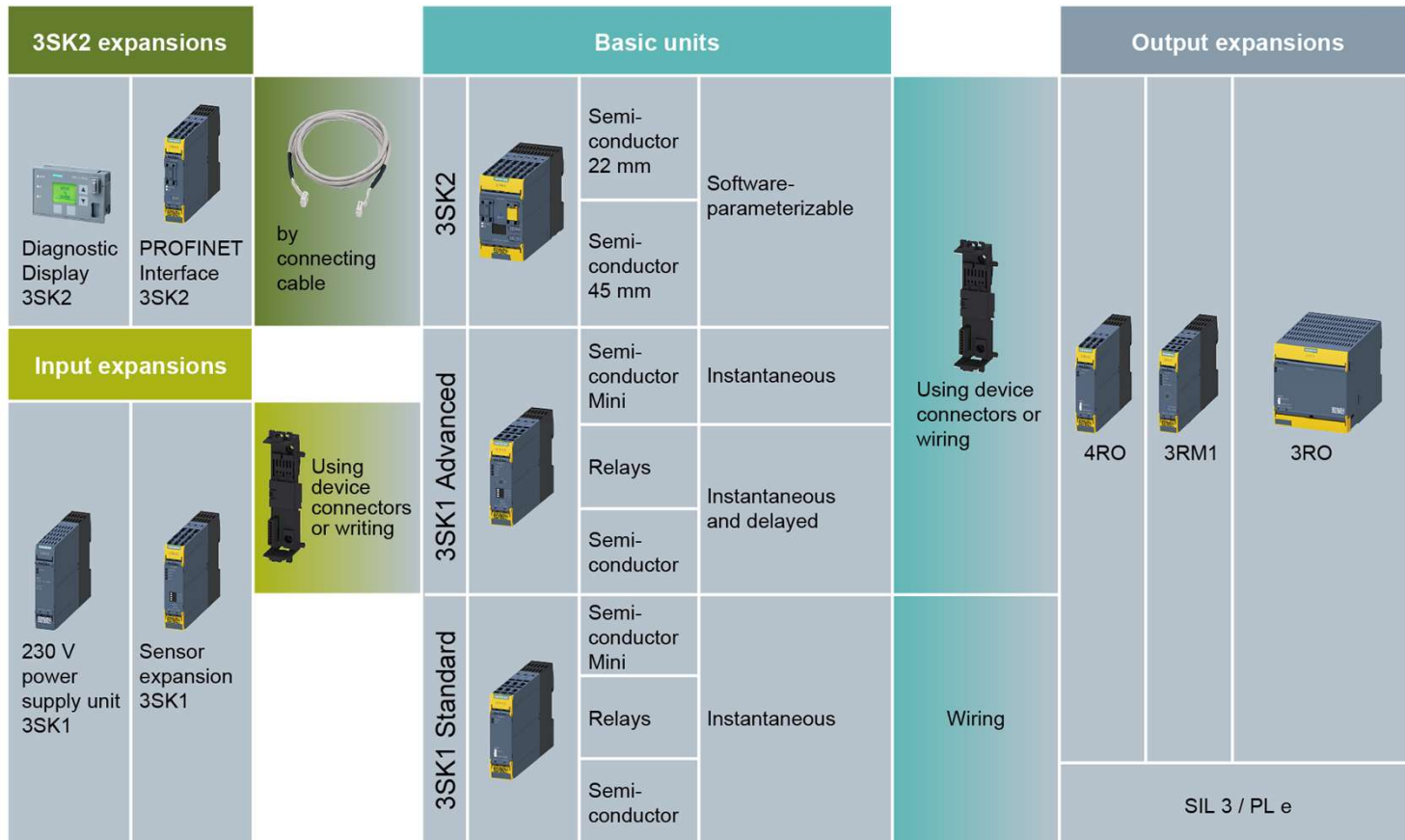
SIRIUS safety relays can always provide a solution

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Evaluation

Individual 3SK system components can be flexibly combined



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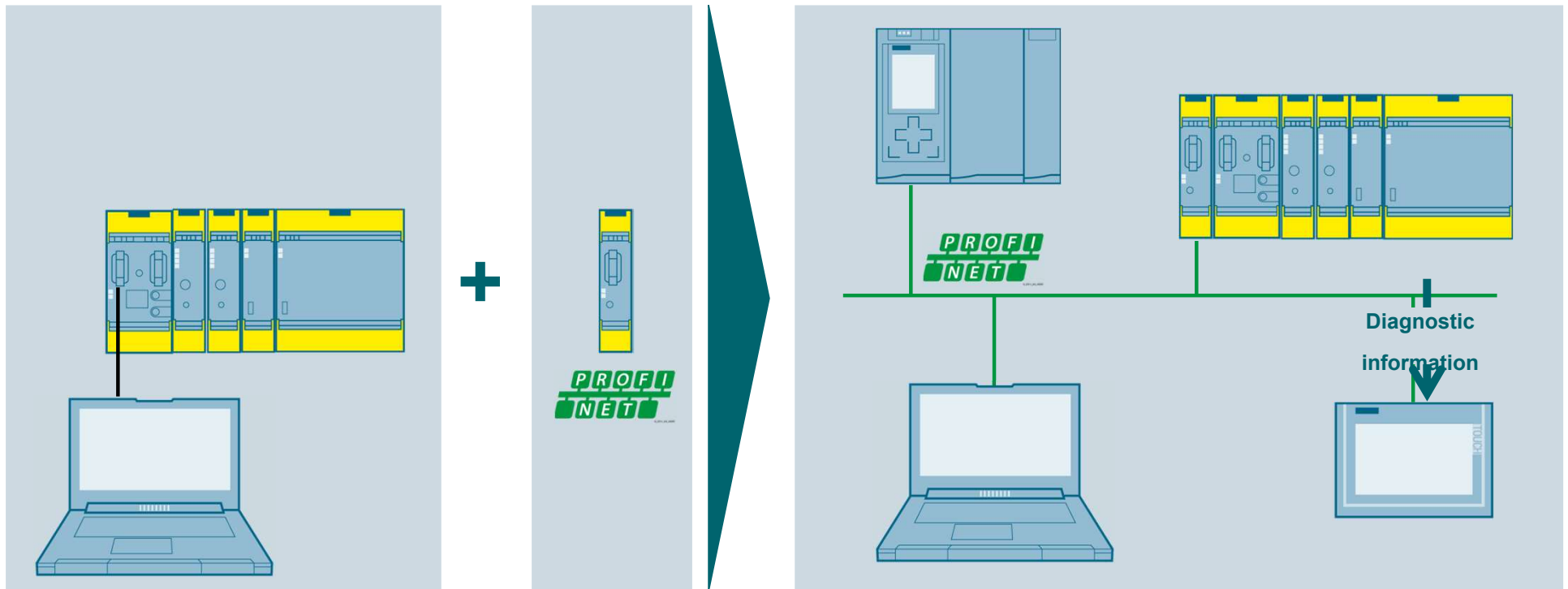
Evaluation

3SK2 PROFINET as Add-On

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From stand-alone application...

... to the TIA-integrated safety relay



Evaluate

3TK28 conversion to 3SK1



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Evaluate

SIMOCODE pro V intelligent motor feeder including safety technology

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Components High Performance – Overview of SIMOCODE pro V

Basic unit	Expansion module	Current or current/voltage measuring module	Residual current transformer 3UL23	Operator panel with display
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Evaluate

Expanding SIMOCODE pro V with safety technology

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Components – Expansion modules for SIMOCODE pro V (High Performance)

DM-F Local fail-safe digital module



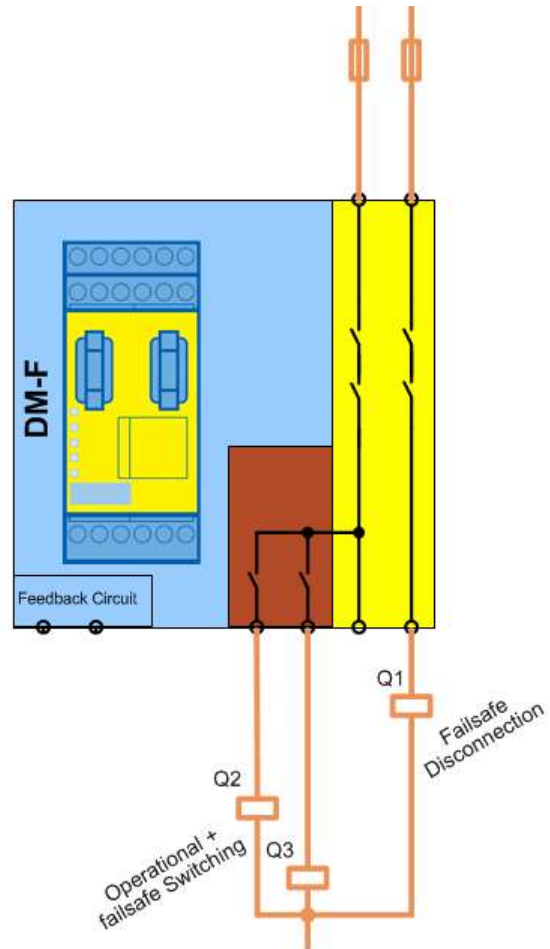
DM-F PROFIsafe fail-safe digital module



Evaluate

Fail-safe and functional shutdown through innovative combination in the DM-F

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**Reaction –
safe actuators**

Reaction

SIRIUS Safety Integrated

Safe actuators



SIRIUS Control & Monitor

- Contactors and contactor assemblies 3RT, 3RA23, 3RA24
- Protectors 3RV
- Coupling relay 3RQ1
- Overload relays 3RU/3RB
- Load feeders 3RA2
- Compact starters 3RA6

SIRIUS Hybrid

- Soft starter 3RW55 Failsafe
- Motor starters 3RM1
- SIMATIC ET 200SP motor starter
- SIMATIC ET 200pro motor starter

SIRIUS Command

Signaling devices

- Signaling columns 8WD4
- Integrated signal lamps 8WD5

Reaction

Safety benefits of SIRIUS motor contactors with failsafe input

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Digital input available +

Contactors with certified F-PLC input for control from failsafe control systems, standard control systems, and safety relays

Full portfolio +

F-PLC for S2 to S12 available

Safety-oriented applications +

With one contactor:

- SIL 2/ PL c

With two contactors:

- Sil 3/ PL e



Time, cost and space saving +

Reduced wiring and configuration effort due to the omission of coupling level

Simple calculation and documentation by Safety Evaluation @ TST

Auxiliary contact and accessories +

The integrated normally closed contact can be used as a mirror contact in feedback circuit monitoring
Unrestricted use of standard accessories

Reaction

Safety benefits of SIRIUS 3RW55 Failsafe Soft Starters

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Safety Functionality +

SIL 1 / PL c without additional components or SIL 3 / PL e with just one contactor and safety relay for space and wiring savings

Safety Functions integrated +

With integrated Safe Torque Off – STO for safety shut down of the motor



With F-I/O +

Integrated F-DI and F-RQ for simple and quick wiring

Additional +

+ all other top highlights from the 3RW55 standard devices

Reaction

Safety benefits of SIRIUS 3RM1 motor starters

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Compact



- Narrow width
- Multifunctionality: Direct and reversing starters, overload protection and safe shutdown

Economical



- Durable and energy-efficient hybrid switching technology
- Low device variance through wide adjustment range

Standards



- Failsafe SIL 3/ PL e
- ATEX motor overload protection



Simple



- Less wiring in control circuit thanks to device connectors and in main circuit with the infeed system
- Fast diagnostics

Self-monitored



In the event of a fault the 3RM1 prevents motor starting

Integration with safety-relays 3SK



- Simple handling
- No safety wiring
- Easy project planning
- Saves time and money

Reaction

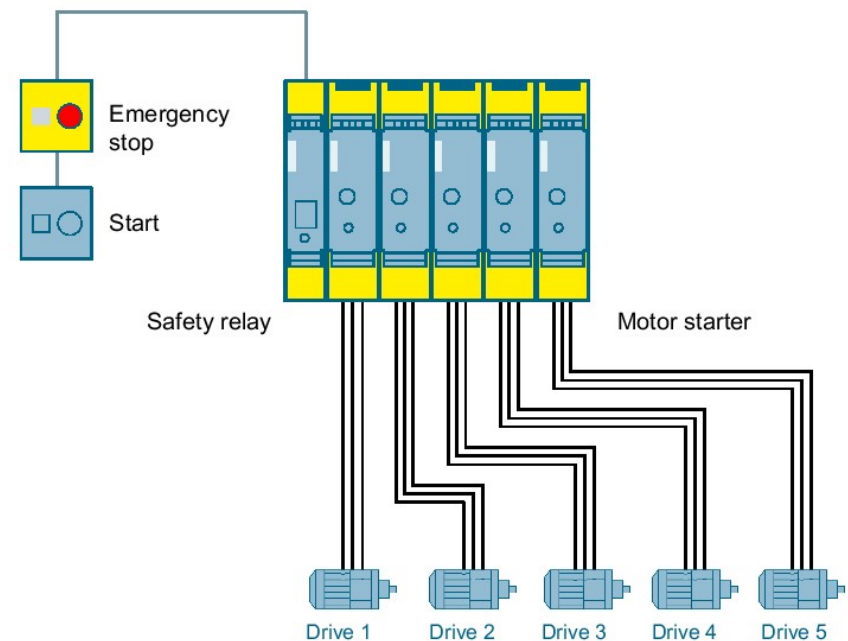
Emergency stop shutdown to SIL 3 or PL e

Sample Application

- To be able to safely shut down a machine in an emergency, an emergency stop command device is attached and monitored by a 3SK1 safety relay.
- Safe shutdown takes place via failsafe motor starters.

Further Information and variety of sample applications: SIOS: 81366718

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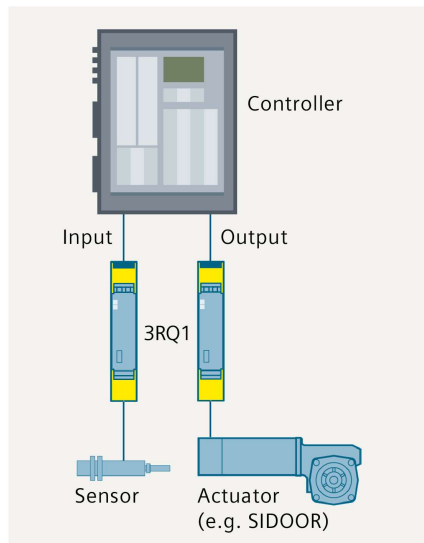
Reaction

3RQ1 for coupling, signal protection and signal extension

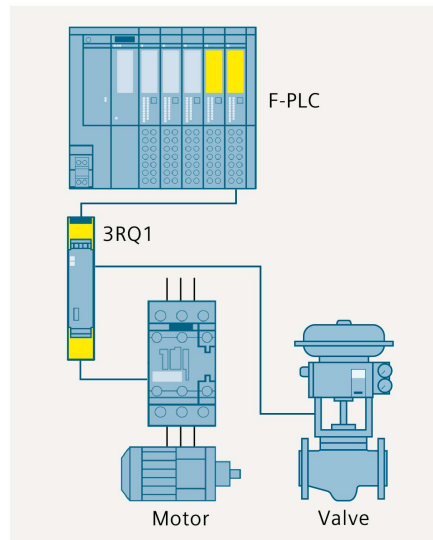


Typical applications for 3RQ1 – Circuit diagram examples

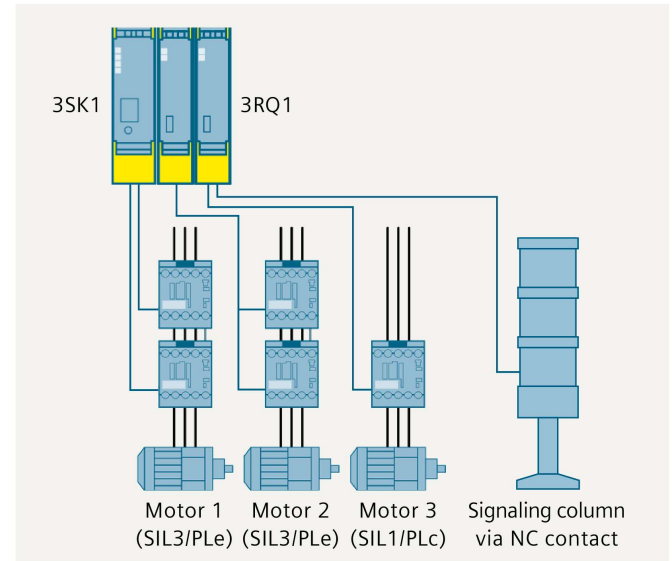
Application based on positive drive



3RQ1 as coupling link for signals, e.g. for failsafe control



3RQ1 as output expansion (SIL 1-3)
For 3SK with direct control of actuators and signal elements



Reaction

Safety benefits of SIRIUS ET 200SP motor starters

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Compact design +

Same reduced dimensions for all versions

Simple application and interchangeability +

Ergonomic installation and wiring system with push-In and power bus

Strong performance +

Up to 4 kW in 3 adjustment ranges (wide setting range)



Seamless integration +

Integrated in the ET 200SP system, the TIA Portal and the TIA Selection Tool

Safety integrated +

SIL 3/ PL e with safety PLC or with safety-relays

Complete TIA integration +

For faster maintenance of starters, maximum efficiency and protection of investments thanks to configuration in TIA Portal

Reaction

Rugged and high-performance distributed I/O system ET 200pro

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SIMATIC ET 200pro distributed I/O system (IP65/67)



Rugged and high-performance distributed I/O system

Reaction

SIRIUS Safety Integrated Application Manual – S.I.A.M



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Entry type: Manual Entry ID: 81366718, Entry date: 07/28/2021

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Application Manual - SIRIUS Safety Integrated

Entry Associated product(s)

Edition: 07/2021

Application Manual
S.I.A.M. SIAM Safety Integrated Application Manual

Article number of the documentation: 3ZX1012-0SK11-1AC1
Document ID number: A5E03752040020A/RS-AJ/009

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Communication – ASIsafe

Communication

SIRIUS Safety Integrated

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ASisafe



Detection

- Mechanical safety switches 3SF1
- SIRIUS ACT 3SU1

Evaluation

- SIMATIC ET 200SP F-CM AS-i Safety ST
- ASisafe SlimLine Compact Module
- ASisafe Compact Module K20F/K45F

Reaction

- Safety monitor AS-Interface
- S45F SlimLine safety modules



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Thank you very much!

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