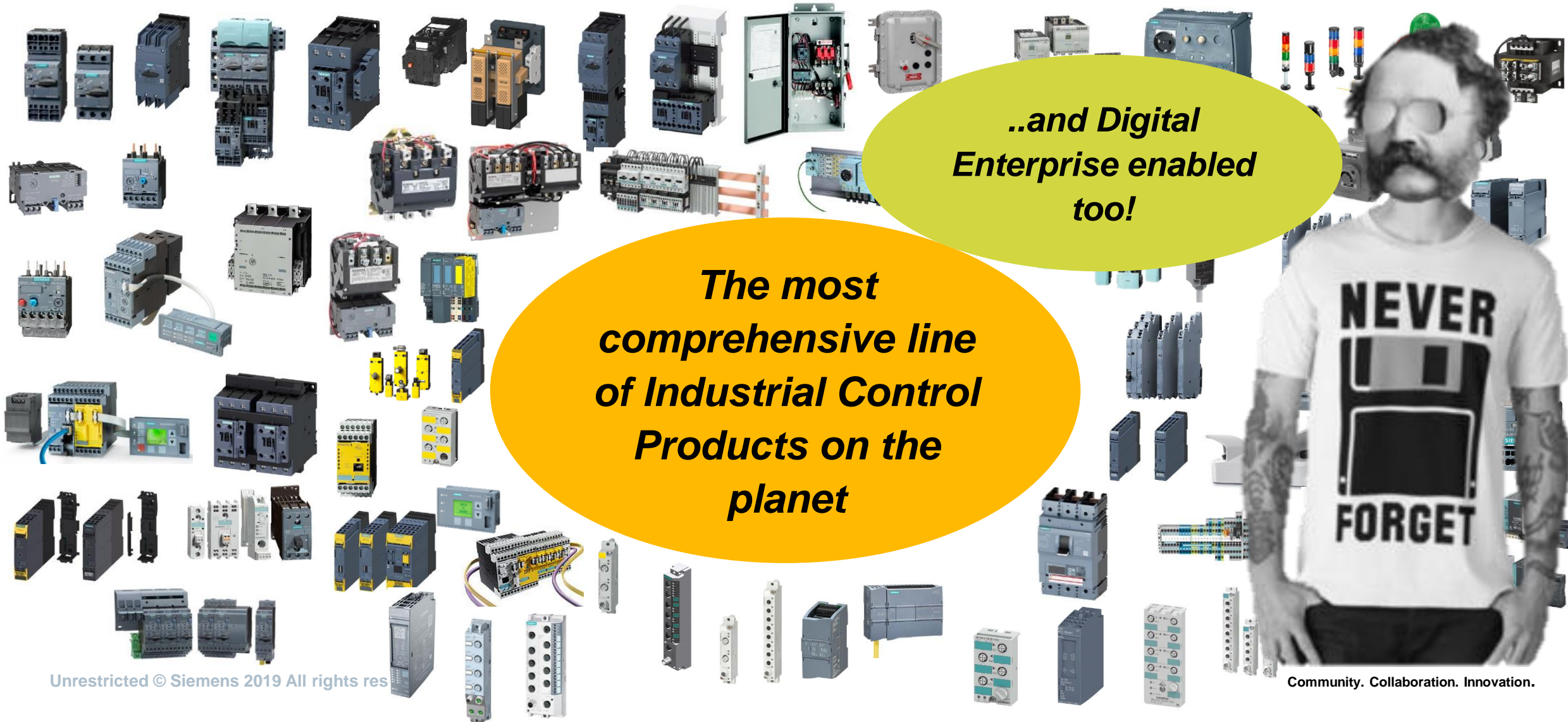


What's New in Siemens Controls

Siemens Industrial Controls

The most innovative and comprehensive product line

SIEMENS
Ingenuity for life



..and Digital Enterprise enabled too!

The most comprehensive line of Industrial Control Products on the planet

The image features four industrial push buttons of different colors: blue, green, red, and yellow. They are arranged on a dark, reflective surface. The blue button is on the left, the green one is in the center, the red one is at the top right, and the yellow one is at the bottom right. Each button has a metallic ring and a textured base. The background is dark, and the buttons are reflected on the surface below them.

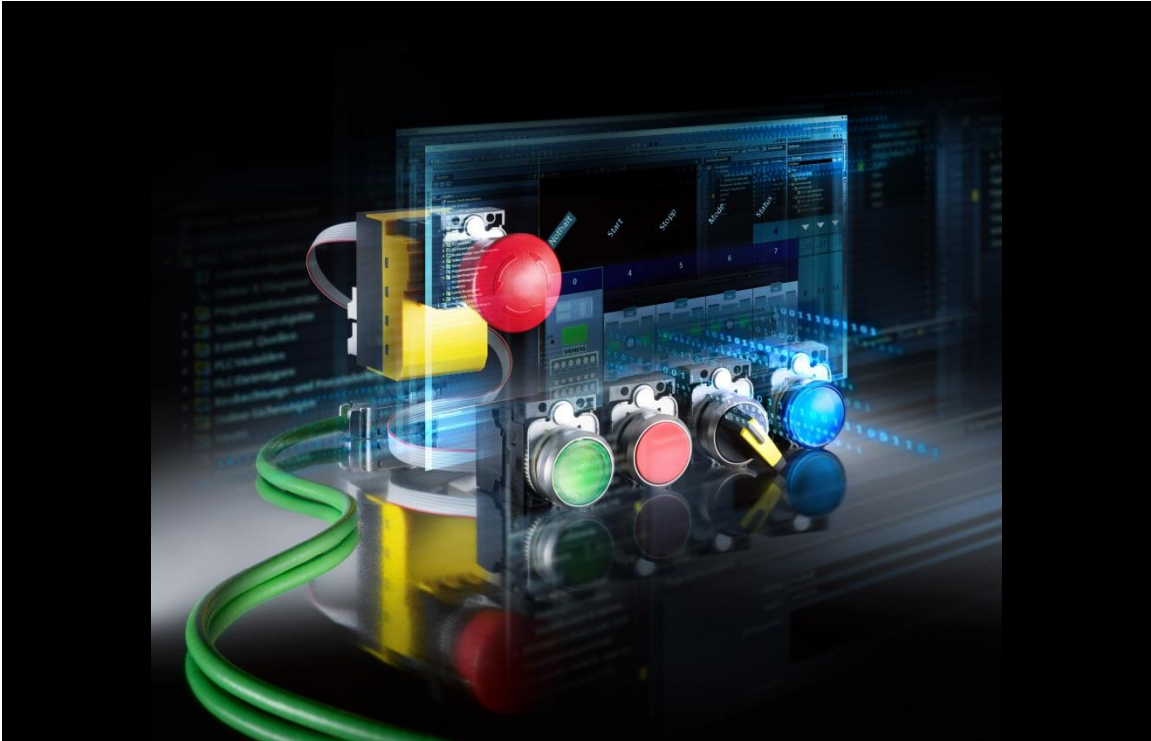
SIRIUS ACT with PROFINET
short introduction

SIRIUS ACT

Convinces with its flexible communication

SIEMENS
Ingenuity for life

Flexible communication



Benefits

- Reduced wiring outlay and thus less sources of error during installation and commissioning
- High flexibility for modifications due to the modular and plug-in design
- Extended diagnostics and parameterization options resulting from integration in the TIA Portal
- Safety Integrated option:
EMERGENCY STOP incorporated via PROFIsafe/ASIsafe communication
- Communication solution for PROFINET (control panel), IO-Link (enclosure solution/ID key-operated switch) and AS-i (enclosure solution/emergency stop connection for the control panel)

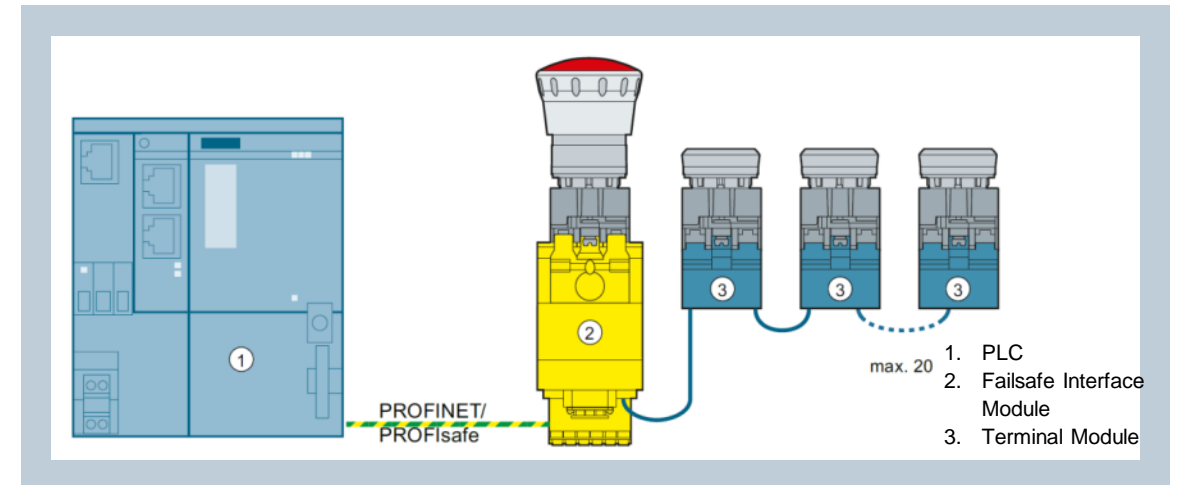
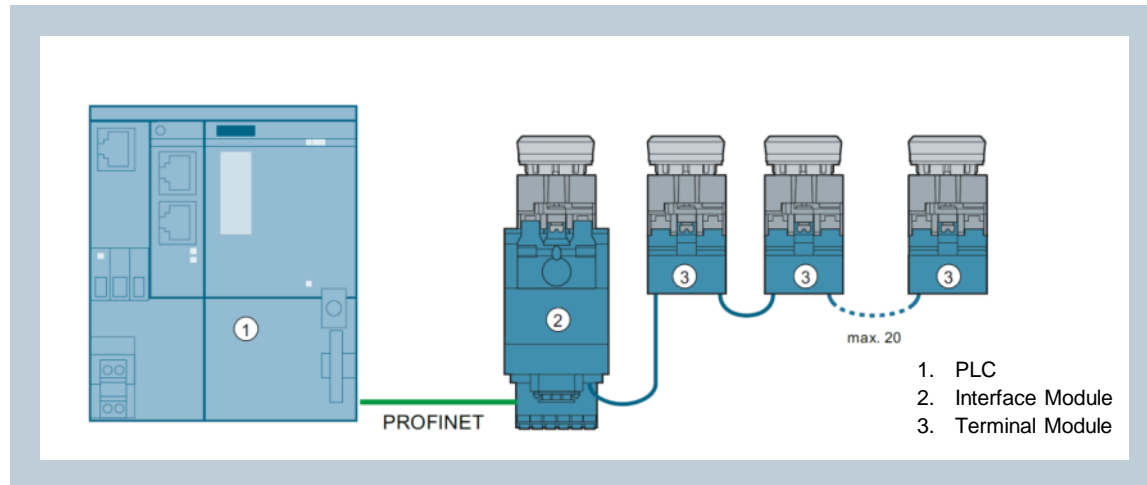
Reduce your wiring outlay through diverse communication solutions.

**SIRIUS ACT**
Performance in Action

SIRIUS ACT PROFINET

Flexibility in all applications

SIEMENS
Ingenuity for life










System data

- Maximum expansion: 1 interface module + 20 terminal modules
- Cable length between modules: 1 meter
- Total cable length (IM – TM): 10 meters
- Power supply: 24 V DC

SIRIUS ACT PROFINET

Just a few components for a complex panel

Interface module Failsafe IM F	Interface module IM	Terminal module TM (command module)	Terminal module TM (command and LED module)	Terminal module TM (LED module)
				
<ul style="list-style-type: none"> • PROFINET/ PROFIsafe • 4 DI (digital inputs) • 1 DQ (digital output) • 1 AI (analog input) • 24 V power supply <p>Spring-type connection: 3SU1400-1LL10-3BA1</p> <p>Screw terminals: 3SU1400-1LL10-1BA1</p>	<ul style="list-style-type: none"> • PROFINET • 24 V power supply <p>Spring-type connection: 3SU1400-1LK10-3AA1</p> <p>Screw terminals: 3SU1400-1LK10-1AA1</p>	<ul style="list-style-type: none"> • Max. 2 mechanical signals for mounting on all non-illuminated SIRIUS ACT devices • Non-illuminated push buttons, selectors <p>MLFB: 3SU1400-1MA10-1BA1</p>	<ul style="list-style-type: none"> • For mounting on all illuminated SIRIUS ACT devices, max. 2 mechanical signals • <u>Colors:</u> red, green, yellow, white, amber, blue <p>MLFB: 3SU1401-1MC 0-1CA1</p> 	<ul style="list-style-type: none"> • For mounting on all SIRIUS ACT indicator lights • <u>Colors:</u> red, green, yellow, white, amber, blue <p>MLFB: 3SU1401-1ME 0-1DA1</p> 

SIRIUS ACT PROFINET

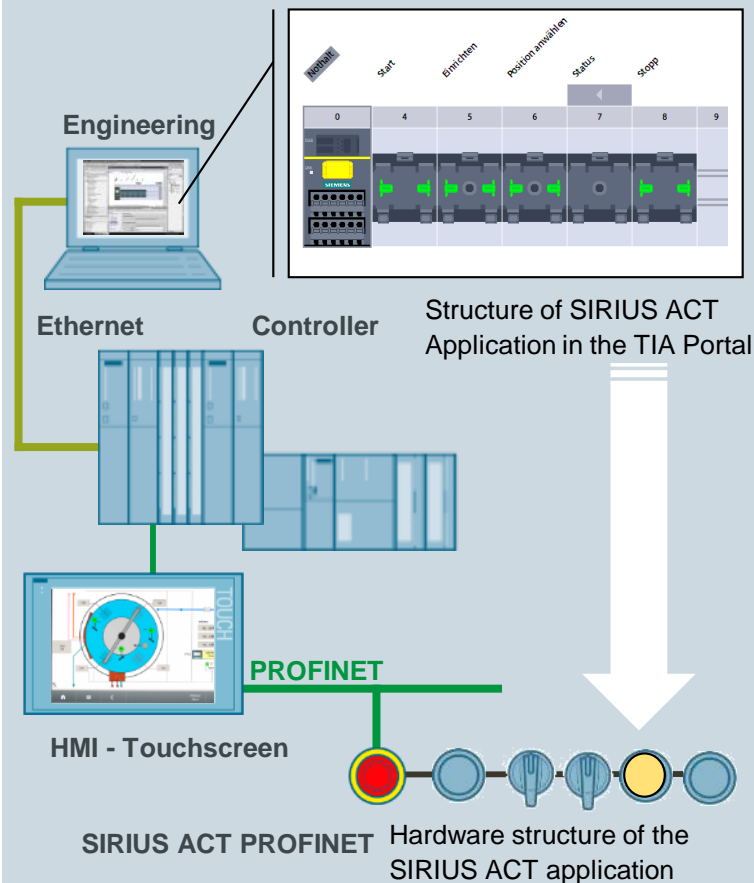
Accessories facilitate handling

Memory module	LEDs that can be integrated	Cables
		
<p>Enables fast device replacement without engineering tools and product-specific engineering know-how Optional for IM; always available for IM F.</p> <p>MLFB: 3RK3-9310-AA00</p>	<p>Enhanced flexibility thanks to fast LED replacement on the interface module.</p> <p>MLFB: 3SU1401-3BA 2 0-5AA0 3 4 5 6 0</p>	<p>7-wire ribbon cable <u>Grid:</u> 1.27 mm <u>Cross section:</u> 0.081 mm² (per stranded wire)</p> <p>Cable 5 m 3SU1900-0KQ80-0AA0</p> <p>Cable 10 m 3SU1900-0KP80-0AA0</p>

SIRIUS ACT PROFINET

Create a digital twin

Hardware configuration



Features

- SIRIUS ACT PN integrated into the TIA Portal
- Visual representation in the TIA Portal for better matching with hardware structure
- Simple and fast hardware configuration thanks to visual representatives

Customer benefits

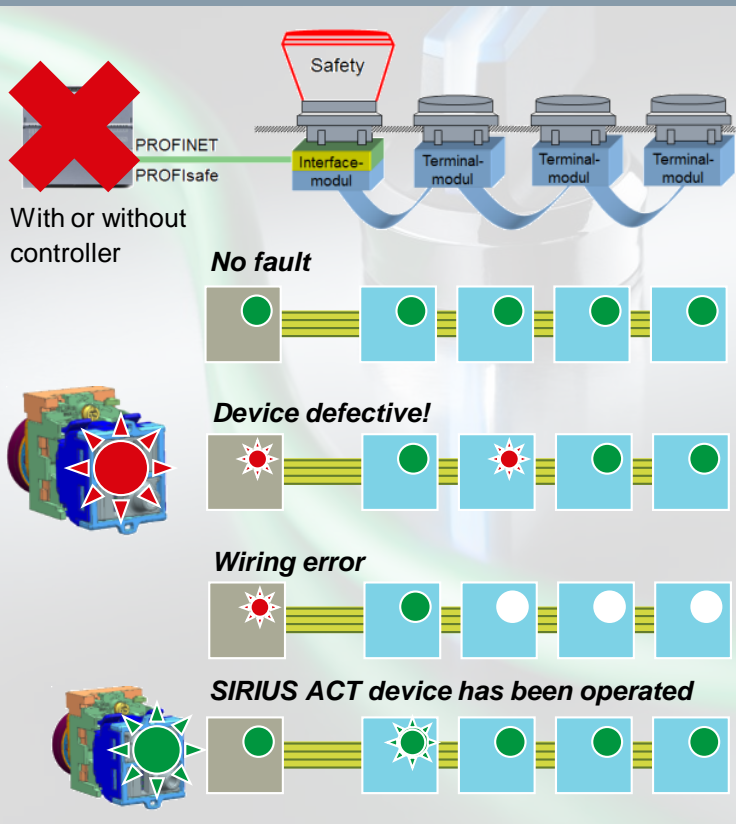
- No addressing of individual modules, physical addressing according to sequence
- Standardized data management
- Time saving thanks to intuitive hardware configuration

SIRIUS ACT PROFINET

Diagnostics options without controller

Hardware diagnostics

How are faults found?



Features

- LED test: all LEDs light up for 2 sec. when the supply voltage is applied
- Diagnostics via status LEDs
- Function tests can be performed without controller

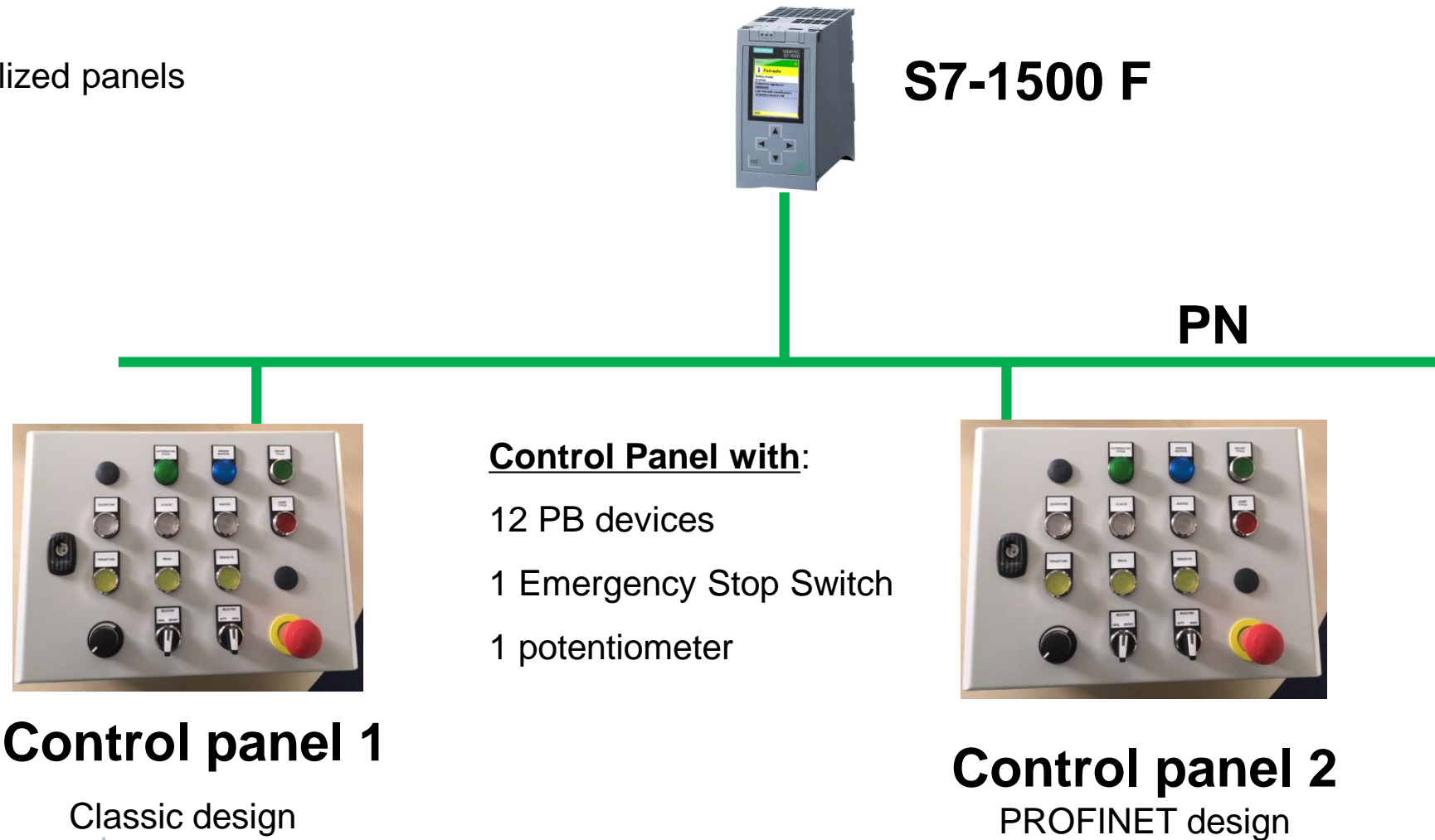
Customer benefits

- Fast fault detection on the device
- Function test possible without controller and without controller know-how
- System configuration possible without subject-specific know-how

Economical comparison between 2 control panels: **Classic wiring versus PROFINET wiring**

Configuration:

PN Control for 2 decentralized panels



Control Panel 1: Classic Design – Economical Analysis



These Power supply and terminals are there only for this demonstration panel,
not necessary for a true equipment

Control Panel 1: Classic Design – Economical Analysis



+ Classic and Recognized Design

SIEMENS Component	\$ 2783
ET200 SP	\$ 1608
SIRIUS ACT	\$ 970
Power Supply	\$ 205
Other	\$ 330
Enclosure	\$ 93
PB Labeling	\$ 64
Wiring Material	\$ 173
Labor	\$ 1054
17 Hours x \$ 62	
Engineering	\$ 664
8 Hours x \$ 83	
TOTAL selling price	\$ 4831

Control Panel 2: PROFINET Design – Economical Analysis



These Power supply and terminals are there only for this demonstration panel,
not necessary for a true equipment

Control Panel 2: SIRIUS ACT PROFINET Solution

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+ Easier to embed in workstation

+ ET200SP not needed

+ Reduced number of parts.
Less parts = less connections

+ Reduced Enclosure footprint

+ Better reliability

+ Easier field modifications and
maintenance



+ Reduced labor. Only 6 hours

+ Reduced engineering. Only 2 hours

+ Second power supply and analog
module not necessary

+ Reduced engineering documentation.
Only 2 sheets for wiring diagram and 2 for BOM

+ Potentiometer directly wired on the
SIRIUS ACT PN Module

Control Panel 2

PROFINET Design – Economical Analysis



SIEMENS Component	\$ 1356
ET200 SP	\$ 0
SIRIUS ACT	\$ 1,272
Power Supply	\$ 84
Other	\$ 167
Enclosure	\$ 93
PB Labeling	\$ 64
Wiring Material	\$ 49
Labor	\$ 372
6 Hours x \$ 62	
Engineering	\$ 166
2 Hours x \$ 83	
TOTAL selling price	\$ 2061

Comparision:

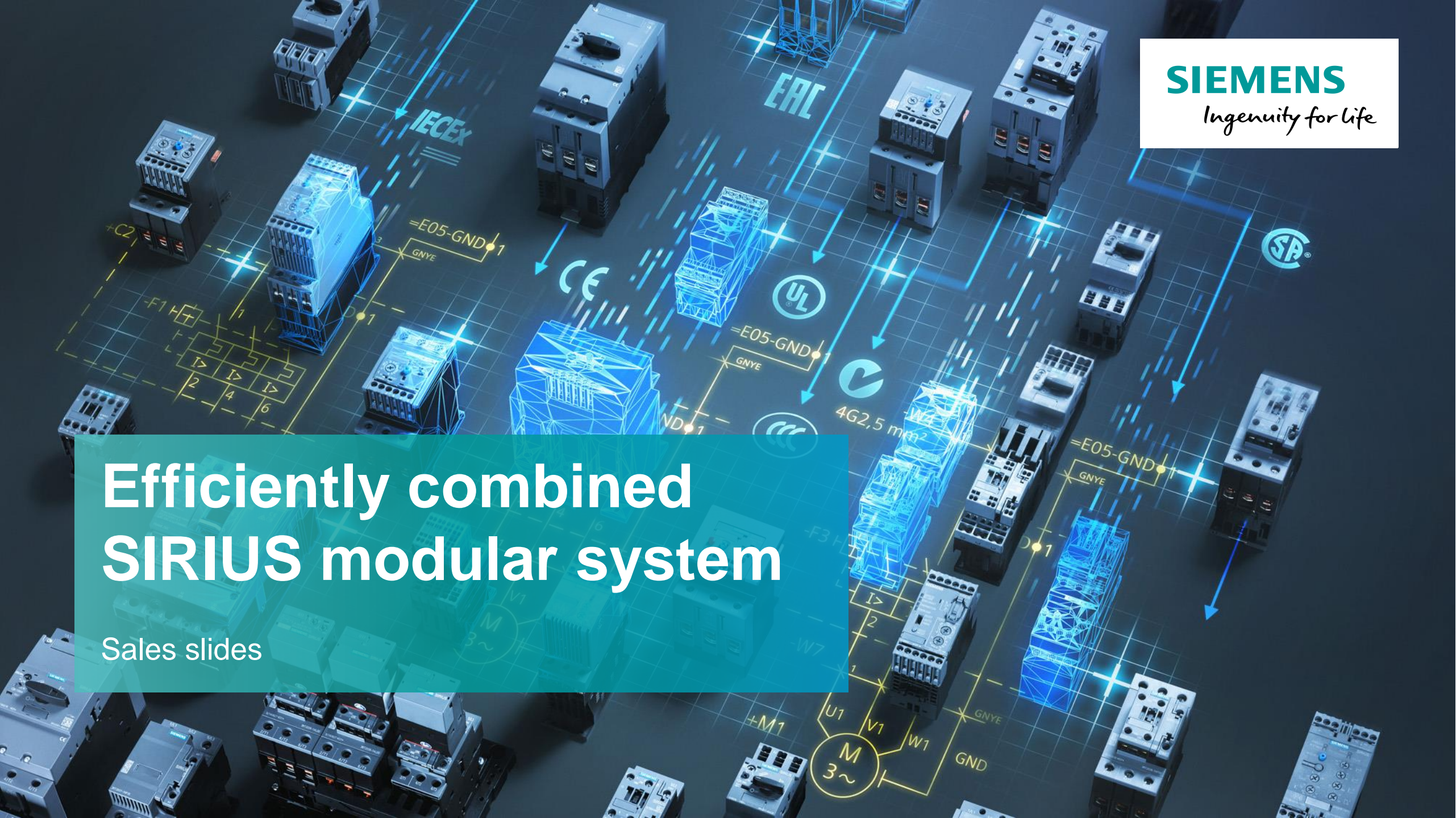
Classis wiring/ PROFINET wiring – Economical Analysis



Classic Wiring		PROFINET WIRING		
SIEMENS Component	\$ 2783	SIEMENS Component	\$ 1356	- 51 %
ET200 SP	\$ 1608	ET200 SP	\$ 0	
SIRIUS ACT	\$ 970	SIRIUS ACT	\$ 1,272	
Power Supply	\$ 205	Power Supply	\$ 84	
Other	\$ 330	Other	\$ 167	- 49 %
Enclosure	\$ 93	Enclosure	\$ 93	
PB Labeling	\$ 64	PB Labeling	\$ 64	
Wiring Material	\$ 173	Wiring Material	\$ 49	
Labor	\$ 1054	Labor	\$ 372	- 65 %
17 Hours x \$ 62		6 Hours x \$ 62		
Engineering	\$ 664	Engineering	\$ 166	- 75 %
8 Hours x \$ 83		2 Hours x \$ 83		
TOTAL selling price	\$ 4831	TOTAL selling price	\$ 2061	- 57 %

Efficiently combined SIRIUS modular system

Sales slides



Switching and protecting– now with all sizes updated! Efficiently combined from S00 to S12 (up to 400 HP)






















SIEMENS
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The SIRIUS modular system

NEW:
All sizes updated –
largest selection of
switching devices
available on the market
with the greatest
number of combination
tests and approvals










SIRIUS modular system

Function		Products	3HP/ 480 V		Size				400 HP/ 480 V	
			S00	S0	S2	S3	S6	S10	S12	
Main circuit	Switching	Contactors								
		Solid-state contactors								
		Soft starters								
	Starting	Load feeders								
		Compact starter								
	Protecting	Motor starter protectors, Circuit breakers								
		Overload relays	thermal							
			electronic							
	Monitoring	Current monitoring relays								
Control circuit	Function and communication modules									

Overview of performance data for all sizes

Current and power [3RT, 3RV, 3RB]

Size	Current/power		
S00 (45 mm)		<div style="background-color: #333; color: white; padding: 2px;">3-10 HP</div> <div style="background-color: #ccc; padding: 2px;">0.1 - 16 A</div>	Old ratings: 12A, 7.5HP
S0 (45 mm)		<div style="background-color: #333; color: white; padding: 2px;">5 – 25 HP</div> <div style="background-color: #ccc; padding: 2px;">0.45 - 40 A</div>	Old ratings: 25A, 15HP
S2 (55 mm)		<div style="background-color: #333; color: white; padding: 2px;">30 – 50 HP</div> <div style="background-color: #ccc; padding: 2px;">9.5 - 65 A</div>	Old ratings: 50A, 40HP
S3 (70 mm)		<div style="background-color: #333; color: white; padding: 2px;">60– 75 HP</div> <div style="background-color: #ccc; padding: 2px;">28 - 110 A</div>	Old ratings: 95A, 75HP
S6 (120 mm)		<div style="background-color: #333; color: white; padding: 2px;">100- 150 HP</div> <div style="background-color: #ccc; padding: 2px;">115 – 185 A</div>	
S10 (145 mm)		<div style="background-color: #333; color: white; padding: 2px;">150– 250 HP</div> <div style="background-color: #ccc; padding: 2px;">225 – 300 A</div>	
S12 (160 mm)		<div style="background-color: #333; color: white; padding: 2px;">300 – 400 HP</div> <div style="background-color: #ccc; padding: 2px;">400– 500 A</div>	

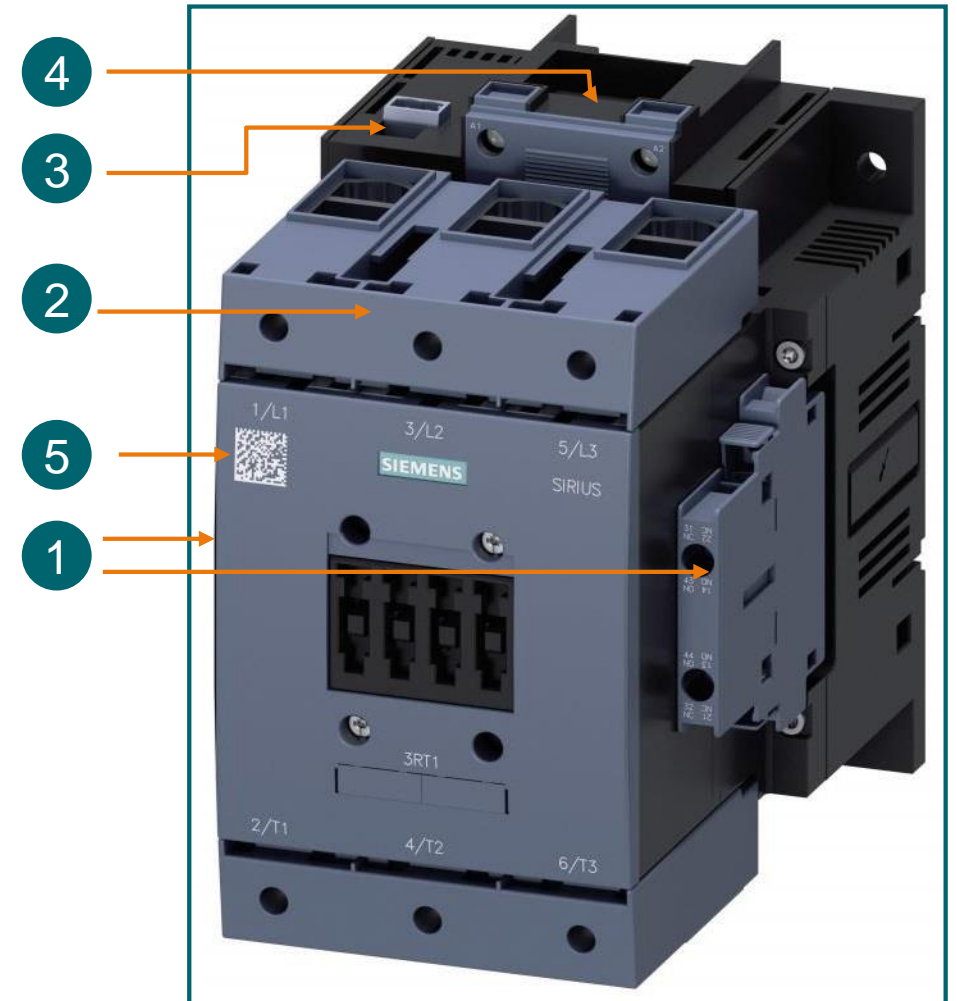


S6-S12 contactors

Product description

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- 1 2 auxiliary contacts each (2NO+2NC) integrated
- 2 Optional box terminal or bus bar connection
- 3 Control via 24V DC PLC-Input (optional)
- 4 Surge suppression circuitry can be directly attached
- 5 Data Matrix Code for fast recall of technical product information via Industry Support App



New: Contactor with fail-safe control

Description

- 3 sizes 3-pole contactor: S6, S10 and S12
- Power range
 - Motor contactors: 100 to 400HP (AC-3/460V)
 - AC-1 contactor : 160A to 610A
- Article number scheme:
 - 3RT10.6-.S... AC-3
 - 3RT10.6-.S...-3PA0 AC-3, SUVA
 - 3RT14.6-.S... AC-1
 - 3RT14.6-.S...-3PA0 AC-1, SUVA

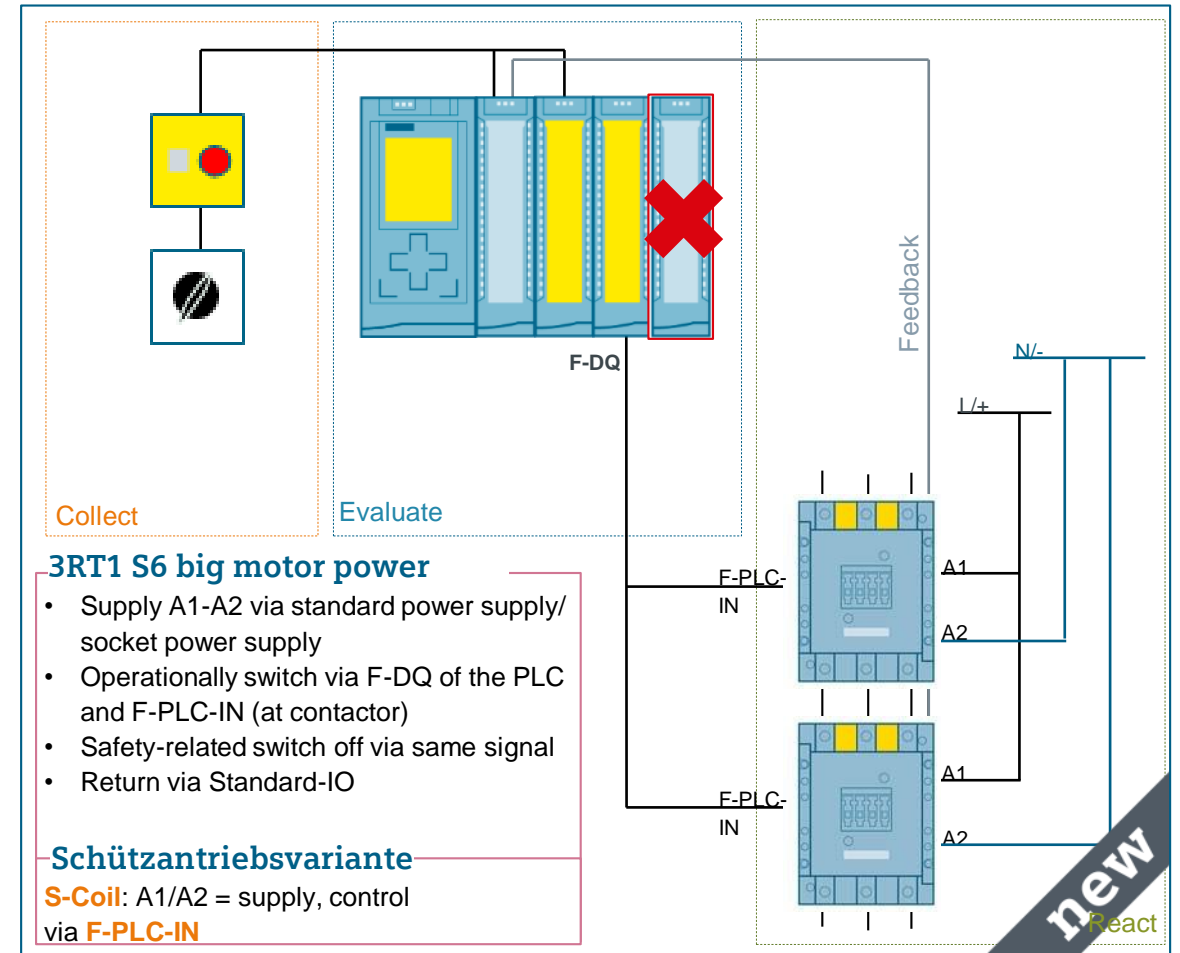
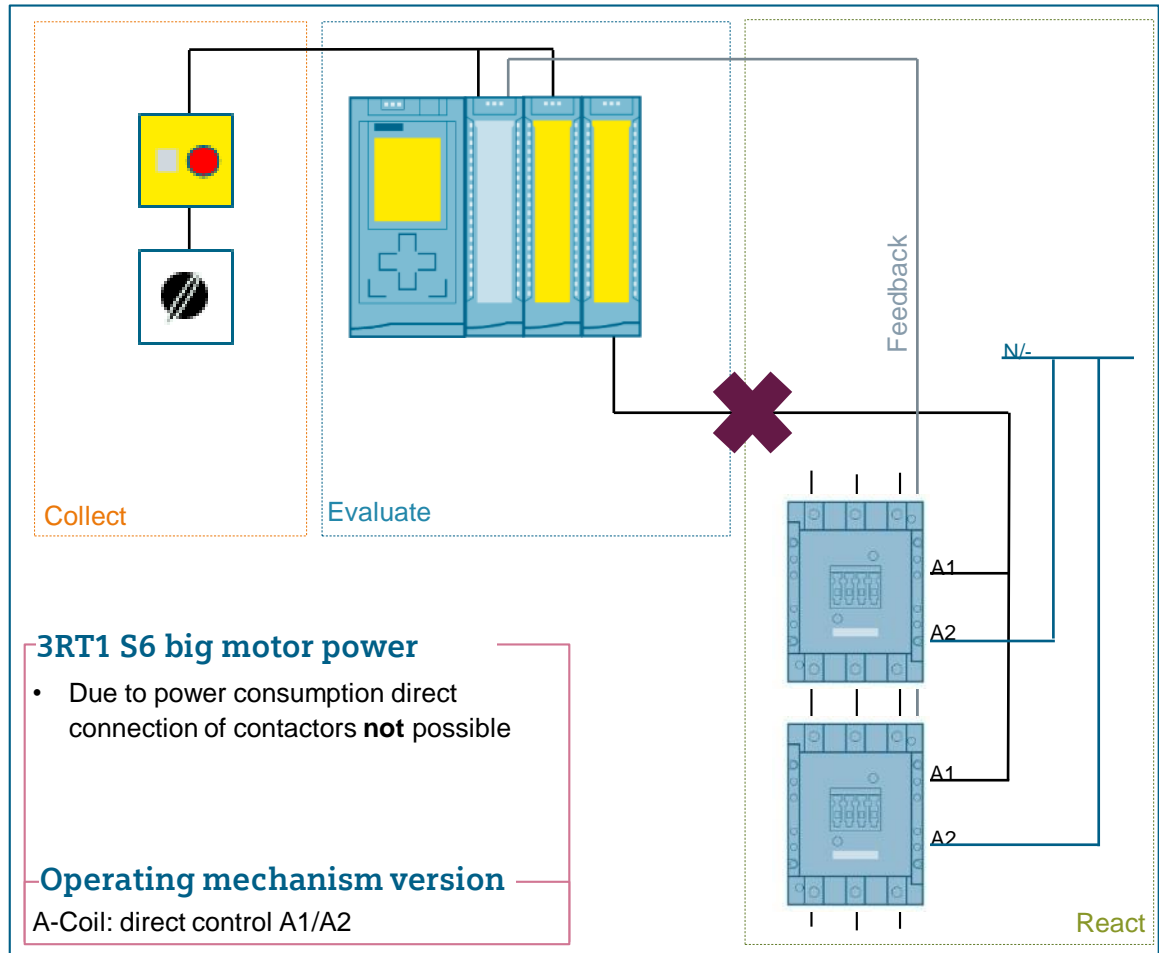
Versions

- Operating mechanism:
 - Wide voltage range **AC 50/60Hz** or **DC**
 - Operating range **0.8 – 1.1**
 - F36: **96 ... 127 V**
 - P36: **200 ... 277 V**
 - F-PLC-IN: **24V DC**
- Auxiliary switch options:
 - 2 lateral AS (2NO & 2NC) removable , or
 - 2 lateral AS (2NO & 2NC) permanent [**SUVA**]:
suffix **-3PA0**



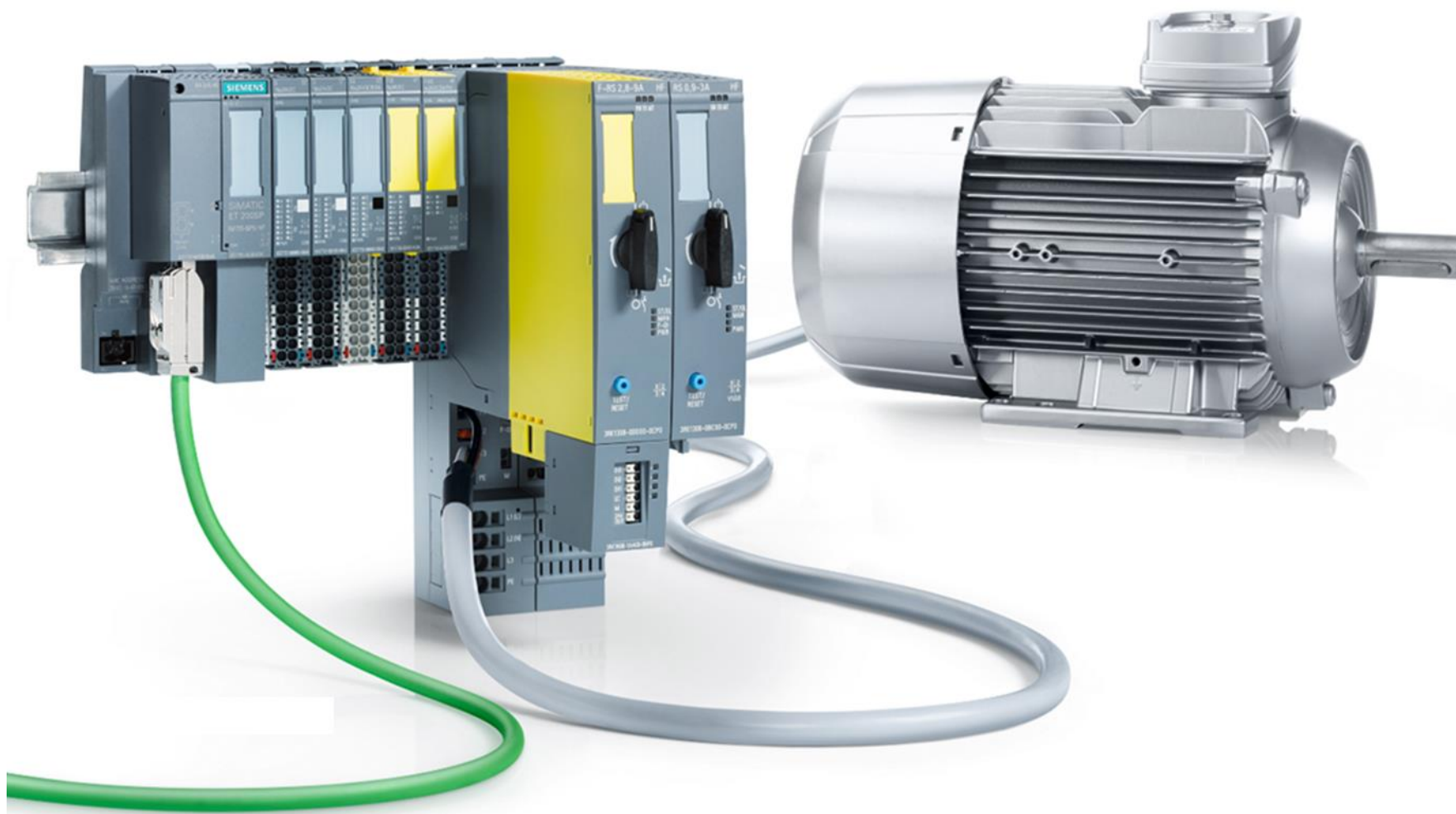
New: Contactor with fail-safe control

Technical details



ET200sp Motor Starter

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Five practical features characterize the motor starter's orientation

Top-Highlights



Compact design

Same dimensions for all versions



Fast installation

Installation- and wiring system
with push-in and energy bus



Strong performance

Up to 5,5 kW (7.5HP) in 4 adjustment ranges
(wide setting range)



Seamless integration

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






Failsafe switch-off with SIL 3 / PL e

Via Safety-SPS
or via safety switching devices



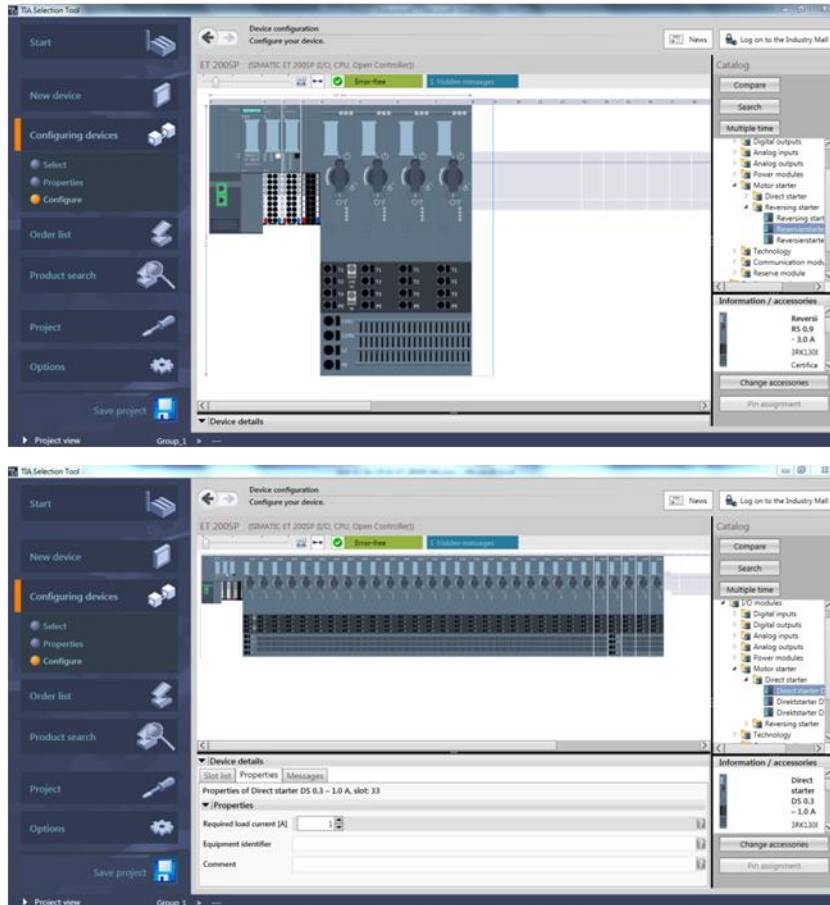
Only three out of many applications

Introduction

Starting three-phase motors	Starting single-phase motors	Switching resistive loads
480 V asynchronous motors for secondary drives, e.g. for conveyor systems	240 V motors, e.g. for pump applications	Gas discharge lamps and heaters
		
Overload and short-circuit protection	Overload and short-circuit protection	Current value measurement and diagnostics > maintenance function

Configure your I/O system online with ease in only six steps using the TIA Selection Tool

Configuration



- **Step 1 General**
Station data and a graphical display of the assembled station
- **Step 2 Module selection**
Prompted selection of modules prompted via module suggestions
- **Step 3 System data**
Display of station size, weight, number of modules, load voltage, parameters, etc.
- **Step 4 Accessories**
Prompted selection of required accessories (module-specific or station-wide)
- **Step 5 Load group distribution**
Graphical display of the potentials in one SIMATIC ET 200SP station
- **Step 6 Parts list**
Automatic generation of a clearly arranged parts list

SIRIUS 3RM1 Hybrid Motor Starters



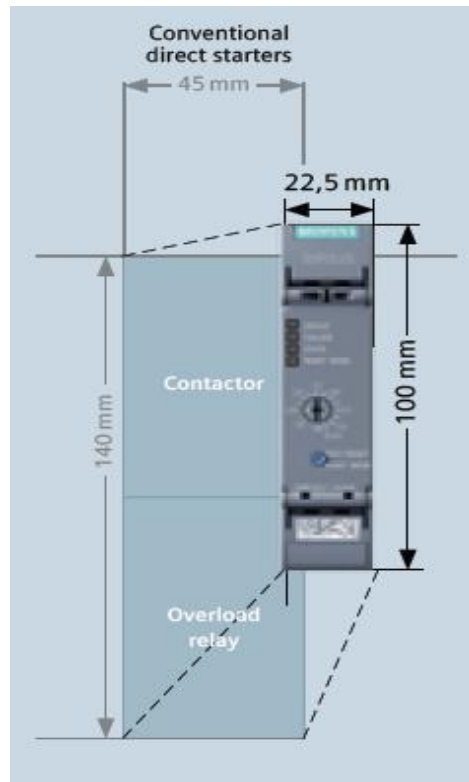
A simple and efficient product range for small motors up to 3hp

SIRIUS 3RM1 Hybrid Motor Starters

Benefits: Start-up in a Small Footprint

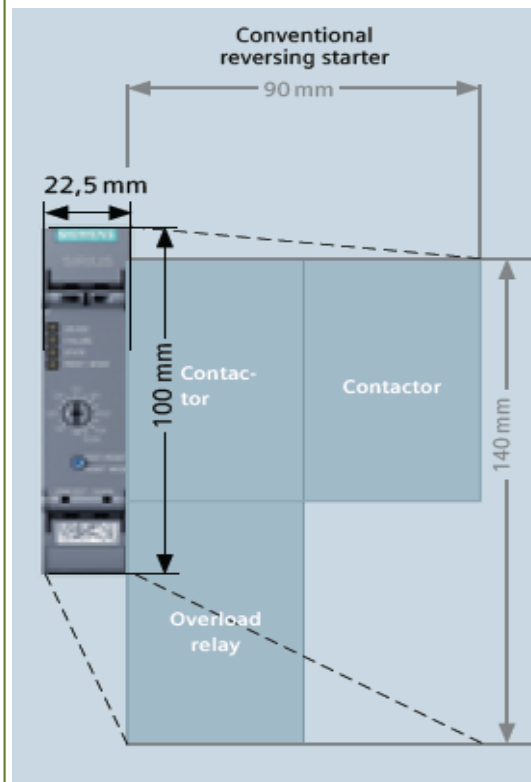
SIEMENS
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3RM10



64% space savings with direct-on-line starter

3RM12



82% space savings with reversing starter

3RM11



75% space savings with safety starter

3RM13



Practically Invisible!

SIRIUS 3RM1 Hybrid Motor Starters Fuse Module

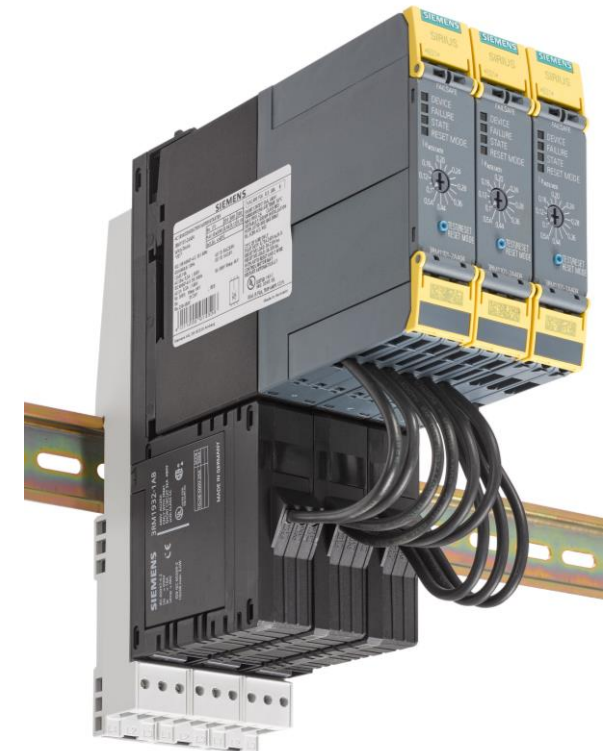
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Fuse Module
3RM1930-1AA
25A Class CC-Fuse
3NW3250-0HG



Fastbus Adapter for 3RM1 fuse
module,
8US1216-0AS00, 8US1616-0AK02



Adapter for DIN Rail
Mounting
8US1716-0RK00

Motor starter $T_A = 50\text{ °C}$		Fuse		
Article number	Rated current [A]	Short circuit current [kA]	Type	Max. size [A]
3RM1...	0.5 / 2.0 / 6.1	100	3NW3250-0HG	25
3RM1...	0.5 / 2.0 / 6.1	50	CLASS CC	20

3SK1 Safety Relay



Basic Unit

Advanced Unit

Overview of 3SK1

- Approved for all safety applications through compliance with SIL 3/PL e
- Multifunctionality achieved through the use of DIP switches
- Modular expansion of input/output and evaluation units
- Designed for use with 3RM1 motor starters by wiring or 3ZY1 connectors
- Advanced units allow for time-delayed outputs

SIRIUS 3SK2 - the smallest software-parameterizable safety relay in the world

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3SK2 highlights



20 Safety Inputs

10 Safety Inputs

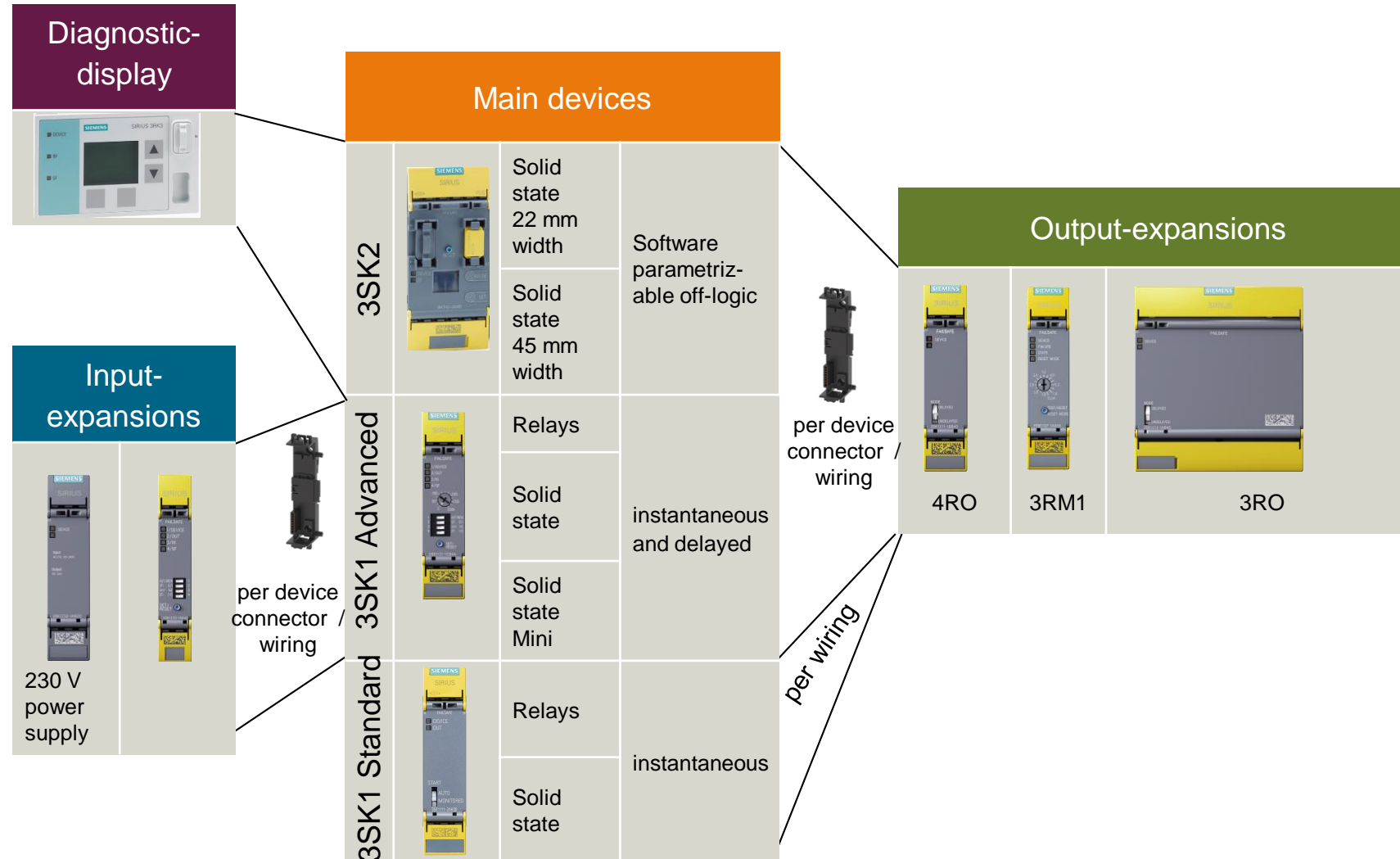
Feature / Function

- Parameterizable in software via drag & drop
- Selective shutdown thanks to separate outputs
- Individually selectable time delay
- 3SK2 offers a host of inputs and outputs despite its low width
- Comprehensive diagnostics incl. forcing via SIRIUS Safety ES software
- Diagnostics display

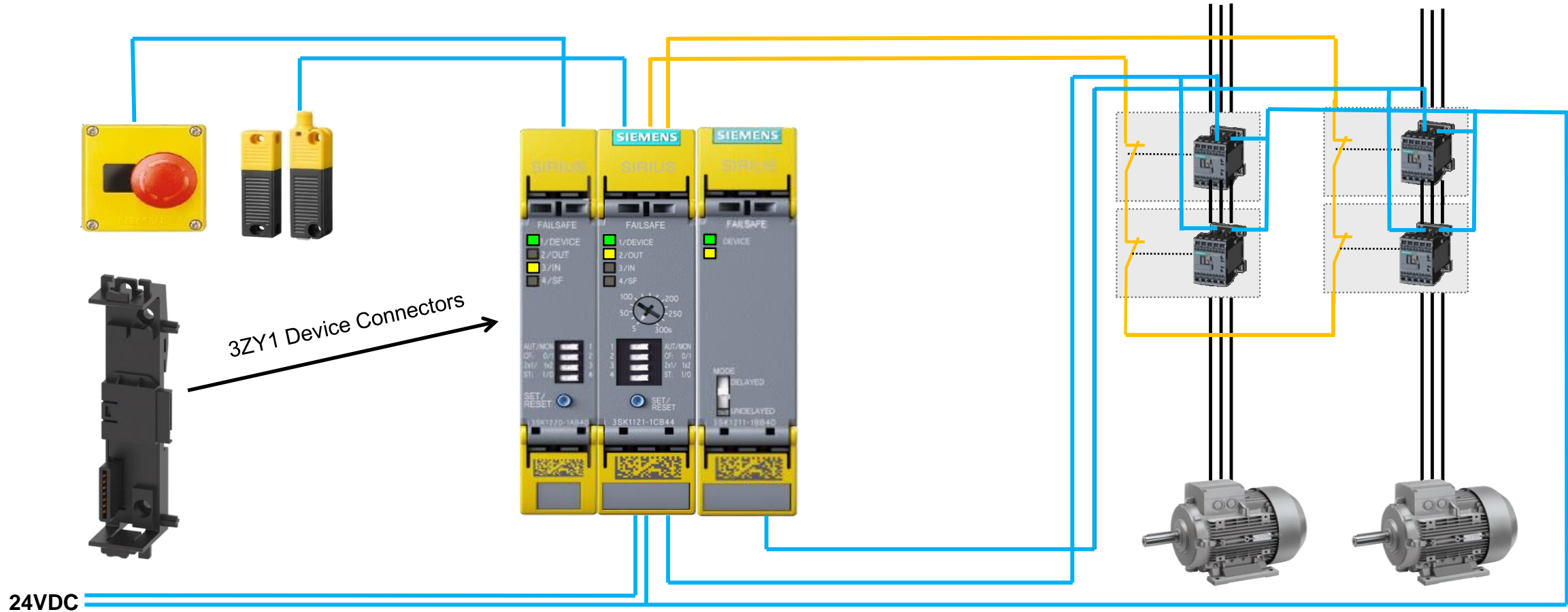
Benefit

- ▶ High level of flexibility
- ▶ Easy to create demanding applications
- ▶ Tailored safety concepts
- ▶ Shutting down of individual plant sections increases availability
- ▶ Space savings in the control cabinet
- ▶ Cost saving
- ▶ Fast commissioning and simple troubleshooting

The individual system components of 3SK are flexibly combinable



Modular expandability of SIRIUS Safety Relays 3SK1



Reduction of wiring outlay and space saving despite higher functionality

3SK2 Safety Relay



Overview of 3SK2

- Supports up to six independent safety functions
- Most compact software-parameterizable safety relay on the market
- Usable in tandem with 3SK1 modules
- Convenient diagnostics through external diagnostic display and software
- Highly versatile and user friendly Safety ES software

Wheat mill with variable feeding Requirements

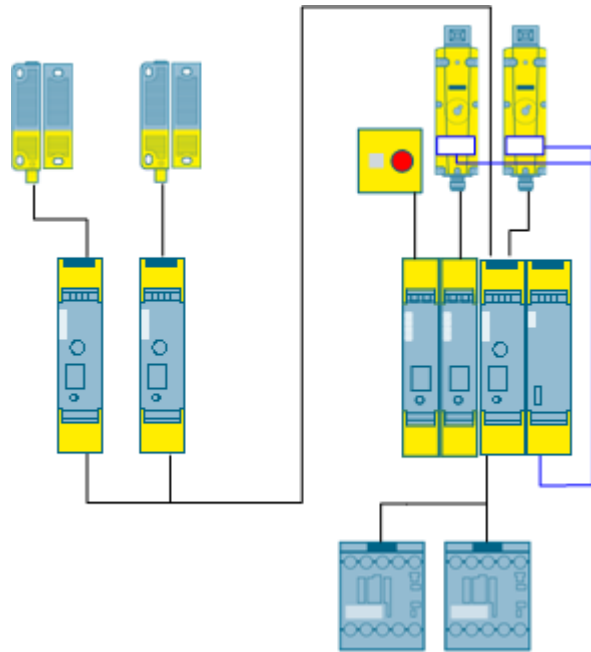
- Alternating monitoring of cone or vessel
- manipulation-proof switches
- door interlock of service door (crushing mill)
- door interlock of service door (vessel)
- nearly no space in cabinet



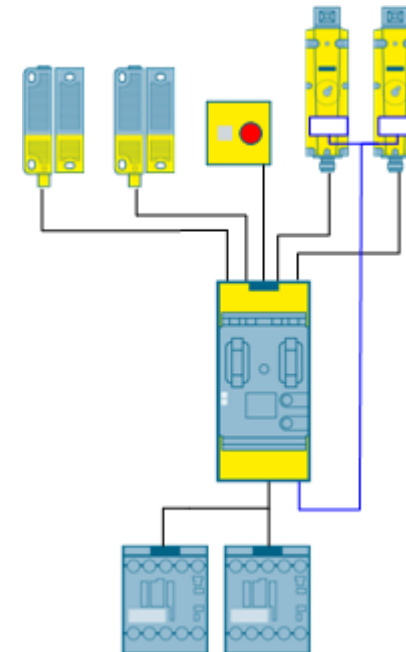
SIEMENS
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Wheat mill with variable feeding Solution

Solution with HW-parameterized
Safety relays

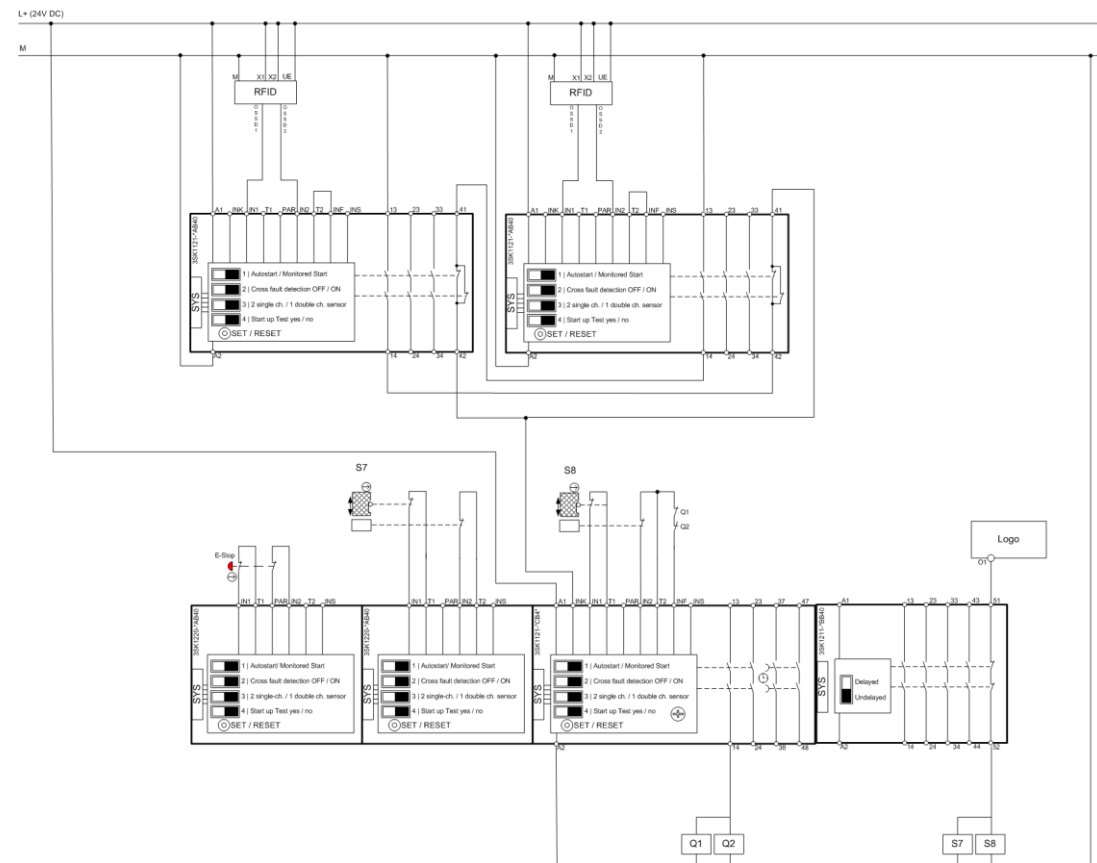


Solution with SW-parameterized
Safety relays 3SK2

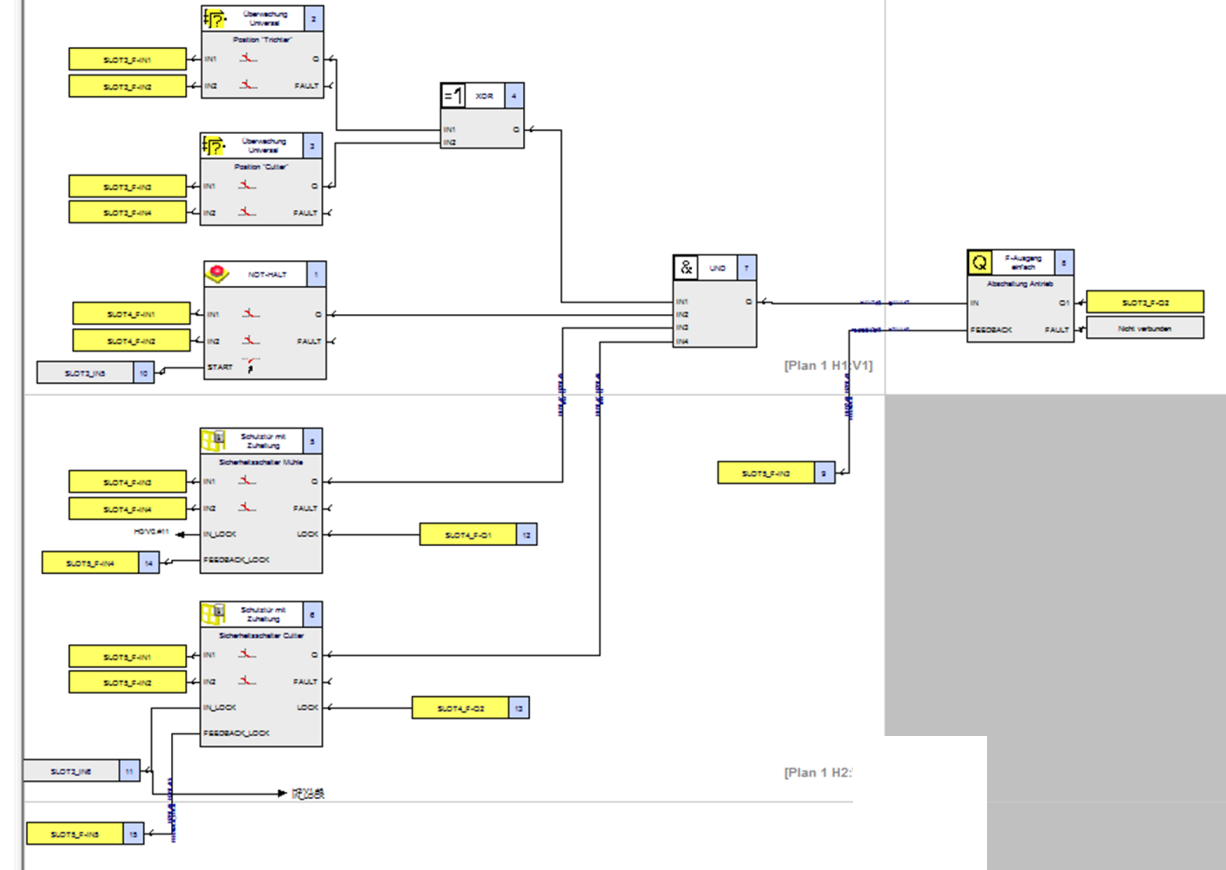


3SK2 Wheat mill with variable feeding Solution

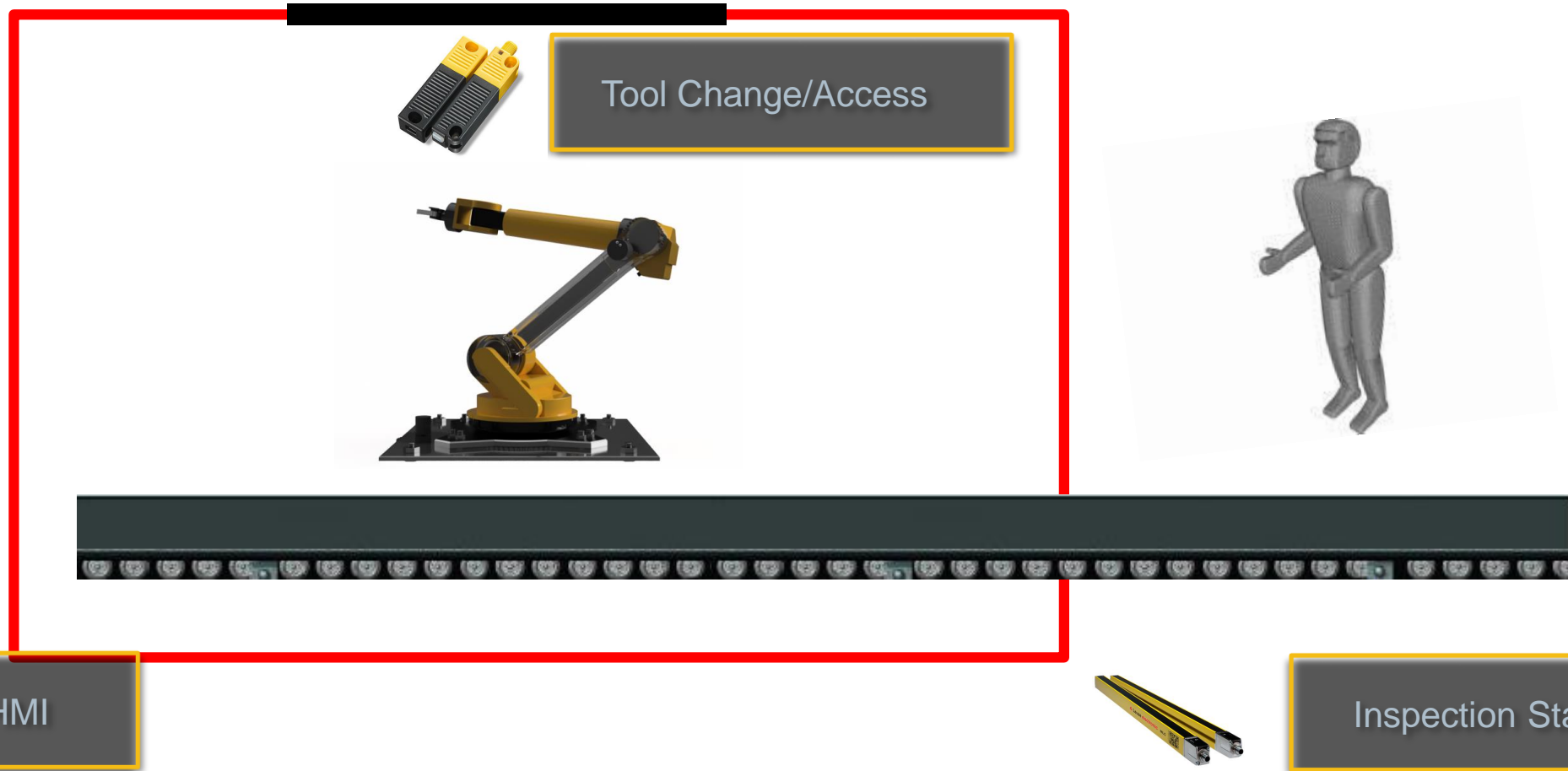
Required 3SK1 Wiring



Required 3SK2 Programming



Material Feeding System: 3SK2 Example



Safety Controls Components: 3SK2 Example

Input Devices



Emergency Stop
- Global



Reset Button



RFID Gate switch
- Safety Motor Starter



Light Curtain
- Contactors

Output Devices



Programmable Safety Relay



Safety Motor Starter
- Conveyor



Contactor
- Robot



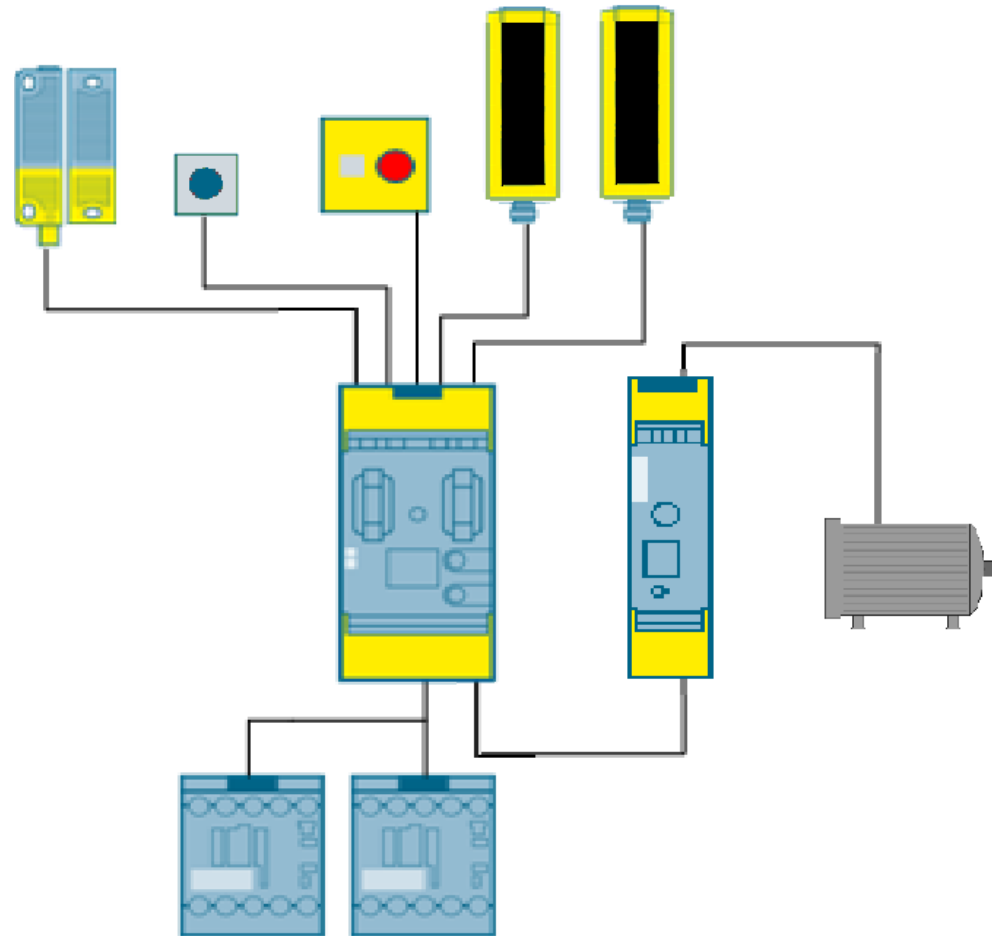
Evaluating SIL Level: 3SK2 Example

Hazard 1: Conveyor

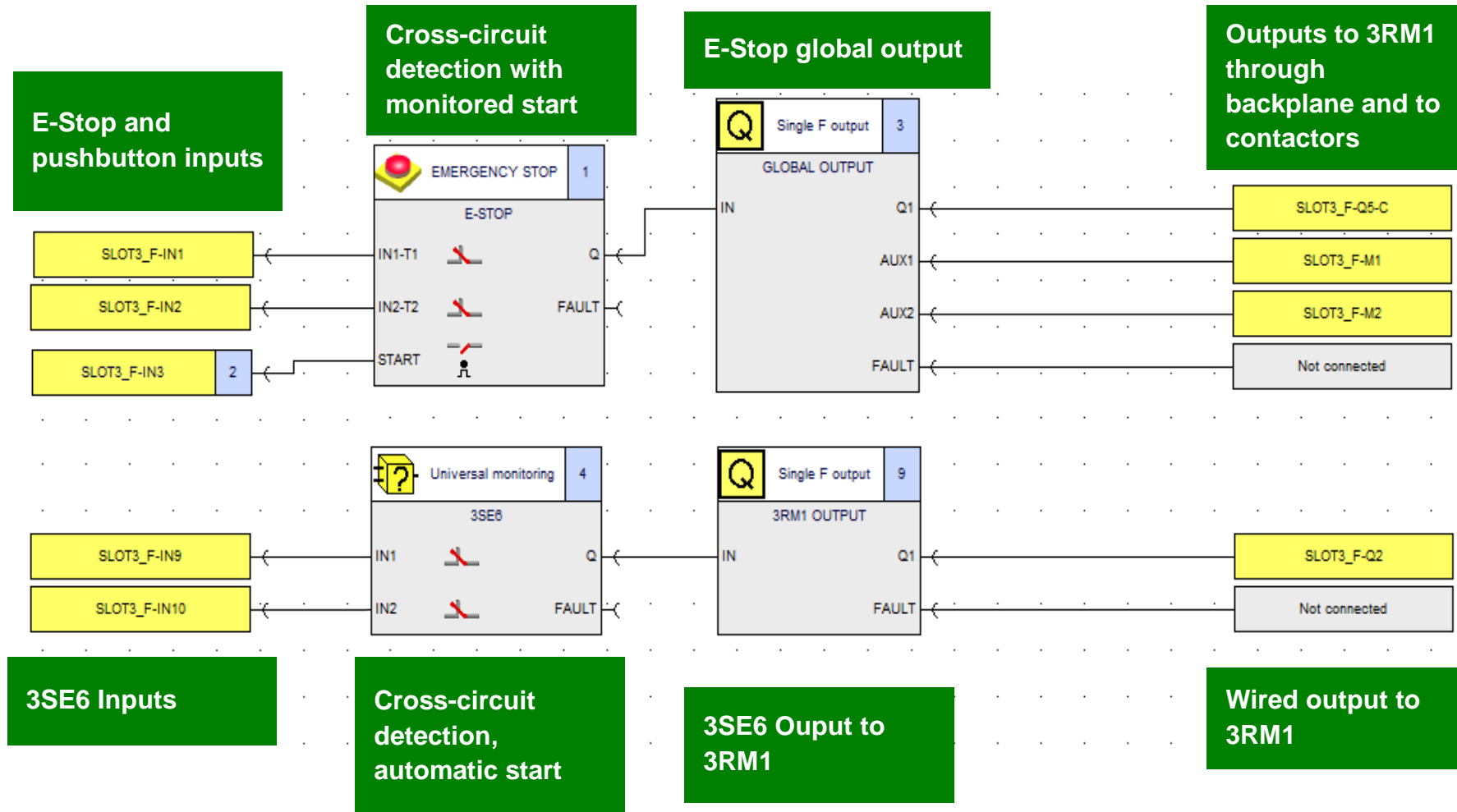
- Severity: 3, Loss of fingers
- Frequency: 5, ≤ 1 Hr
- Occurrence: 2, Rarely
- Preventability: 1, Probable
- Total: 8
- SIL Level: 1

Hazard 2: Robotic Arm

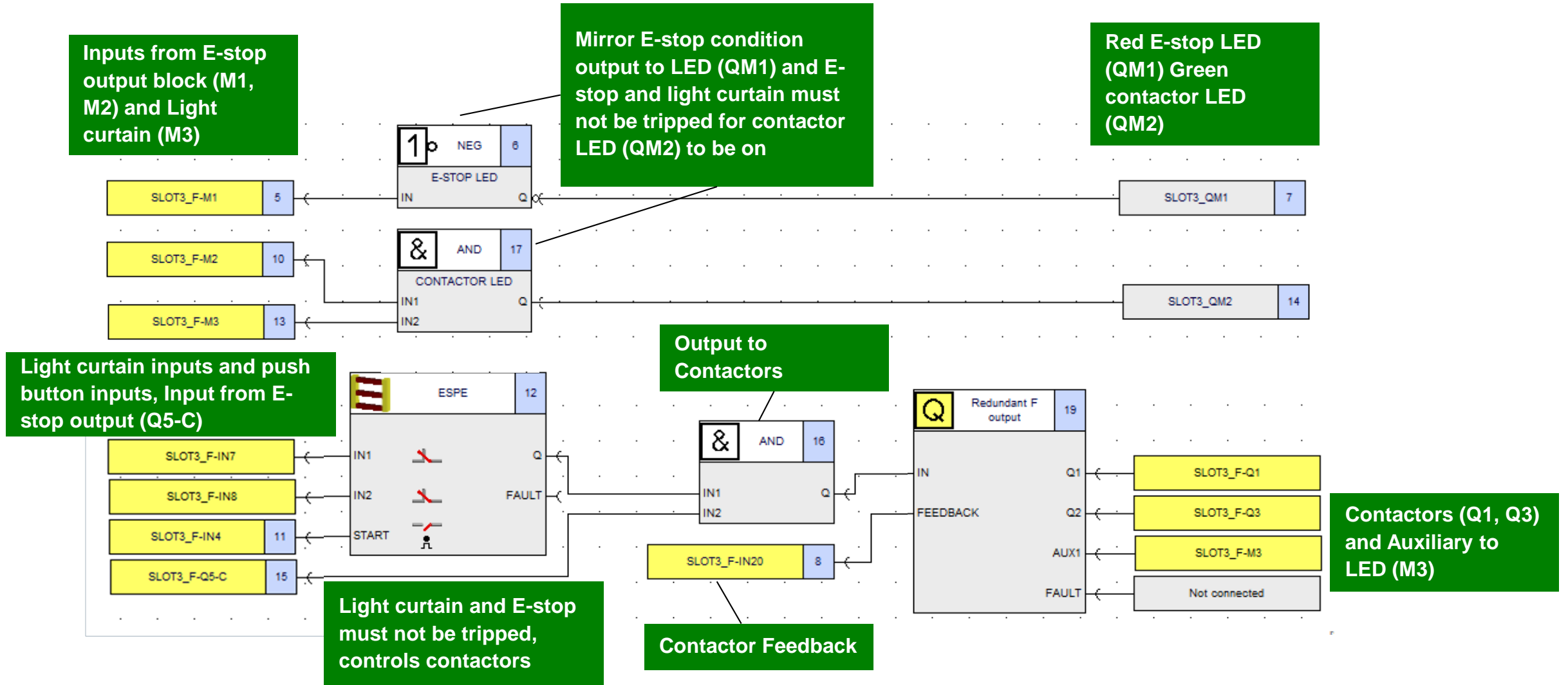
- Severity: 4, Loss of life
- Frequency: 3, > 2 Weeks to 1 Year
- Occurrence: 3, Possible
- Preventability: 5, Impossible
- Total: 11
- SIL Level: 3



Safety ES Software: 3SK2 Example



Safety ES Software: 3SK2 Example



SIRIUS 3RW5 Soft Starters

As versatile as your application

SIRIUS 3RW5 Soft Starters

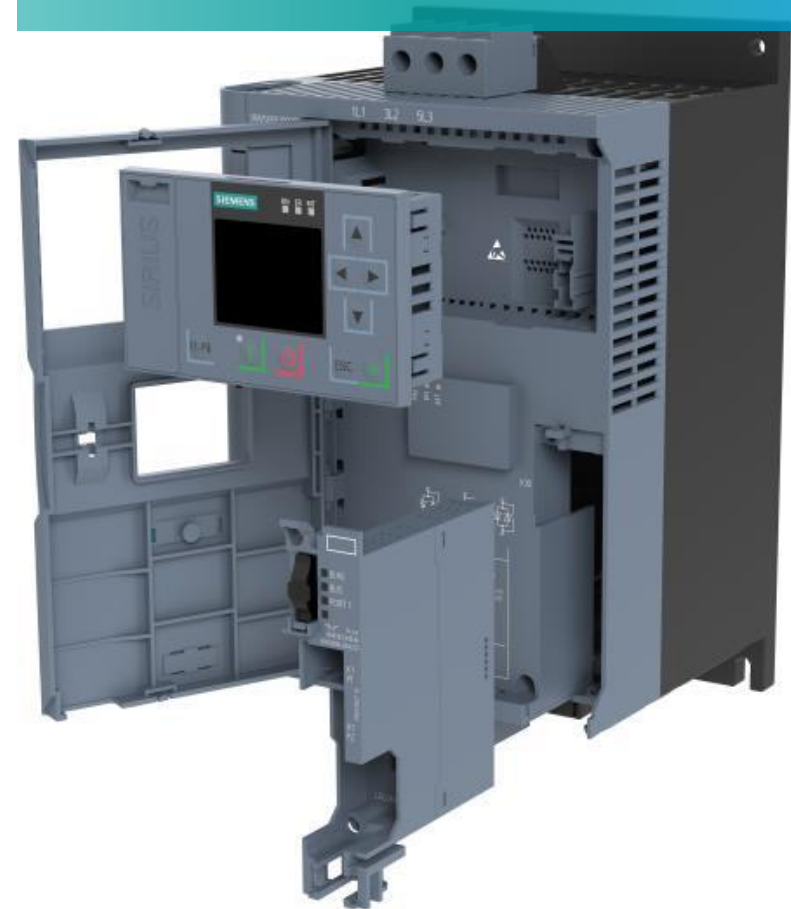
As versatile as your application

SIEMENS
Ingenuity for life

3RW52



3RW55



SIRIUS 3RW Soft Starters match the versatility of your individual challenges in fixed speed applications

SIEMENS
Ingenuity for life

Pumping



- Water & waste water sewage
 - [Pump cleaning](#)
 - [Pump stopping](#)
- Cooling pump
- Hydraulic press

Ventilating



- Air conditioning
- Cooling Compressor
- Tunnel ventilation

Compressing



- Air compressor
- Cooling compressor
- Compressor in biogas plant

Conveying



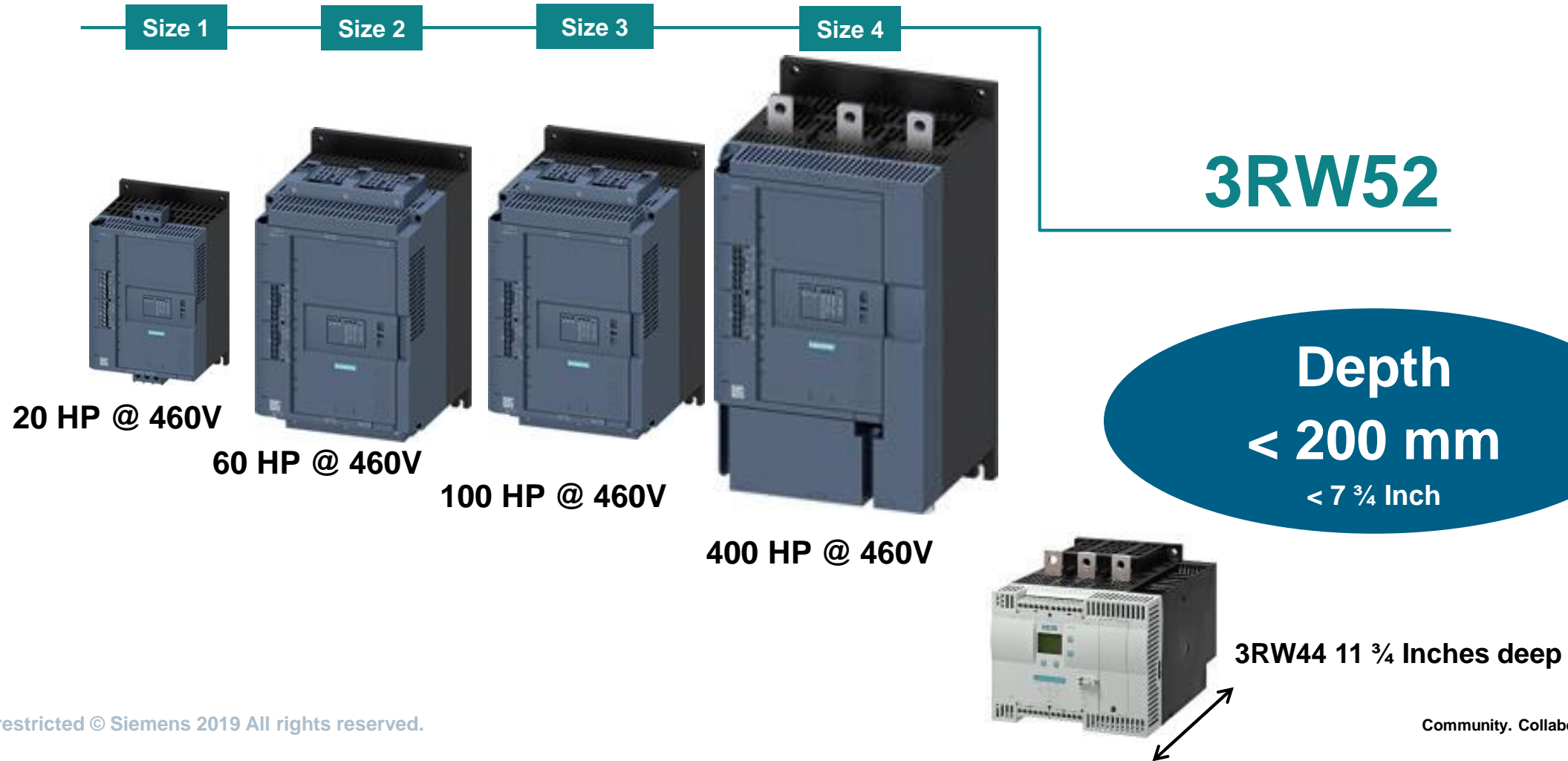
- Conveyor belt in cement factory
- Conveyor belt in quarry
- Reamer in biogas plant

Processing

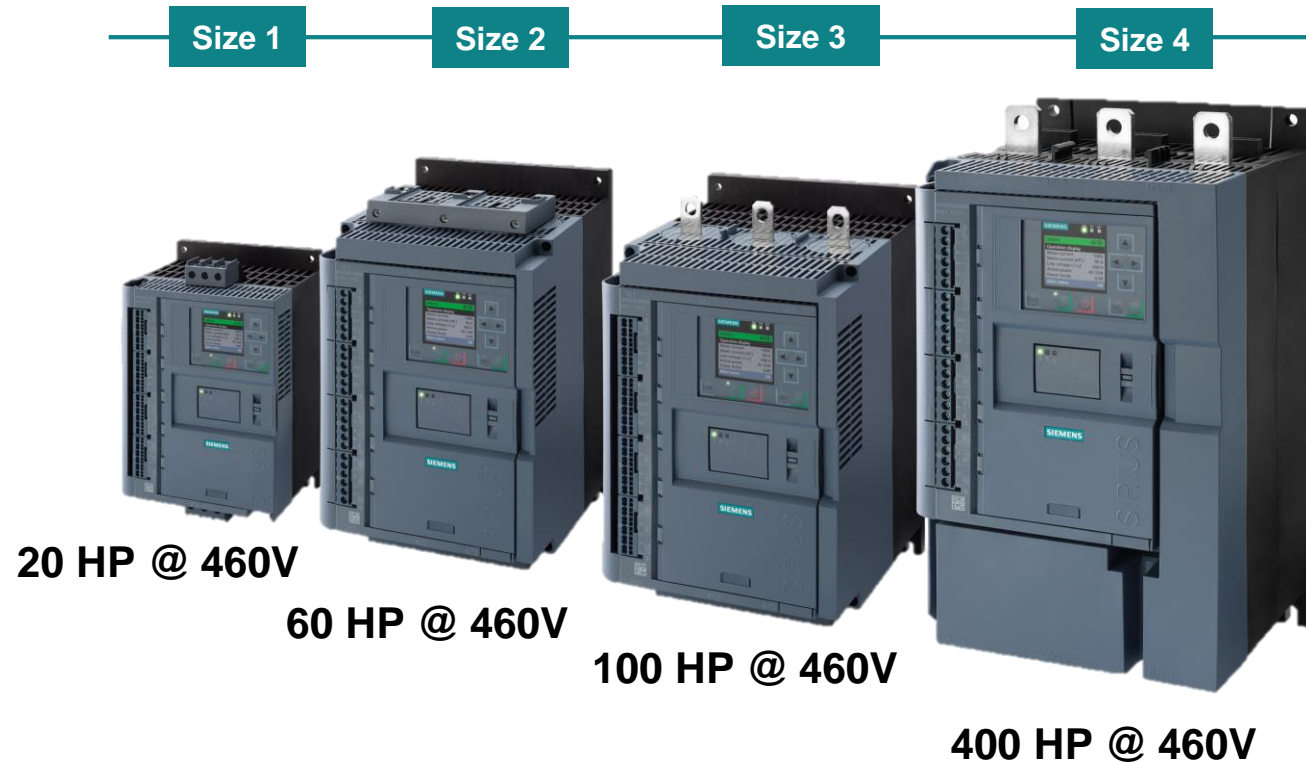


- Stone crusher in quarry
- Agitator in chocolate factory
- Centrifuge in cardboard recycling plant

SIRIUS 3RW52 General Performance Soft Starters - Overview



SIRIUS 3RW55 High Performance Soft Starters - Overview

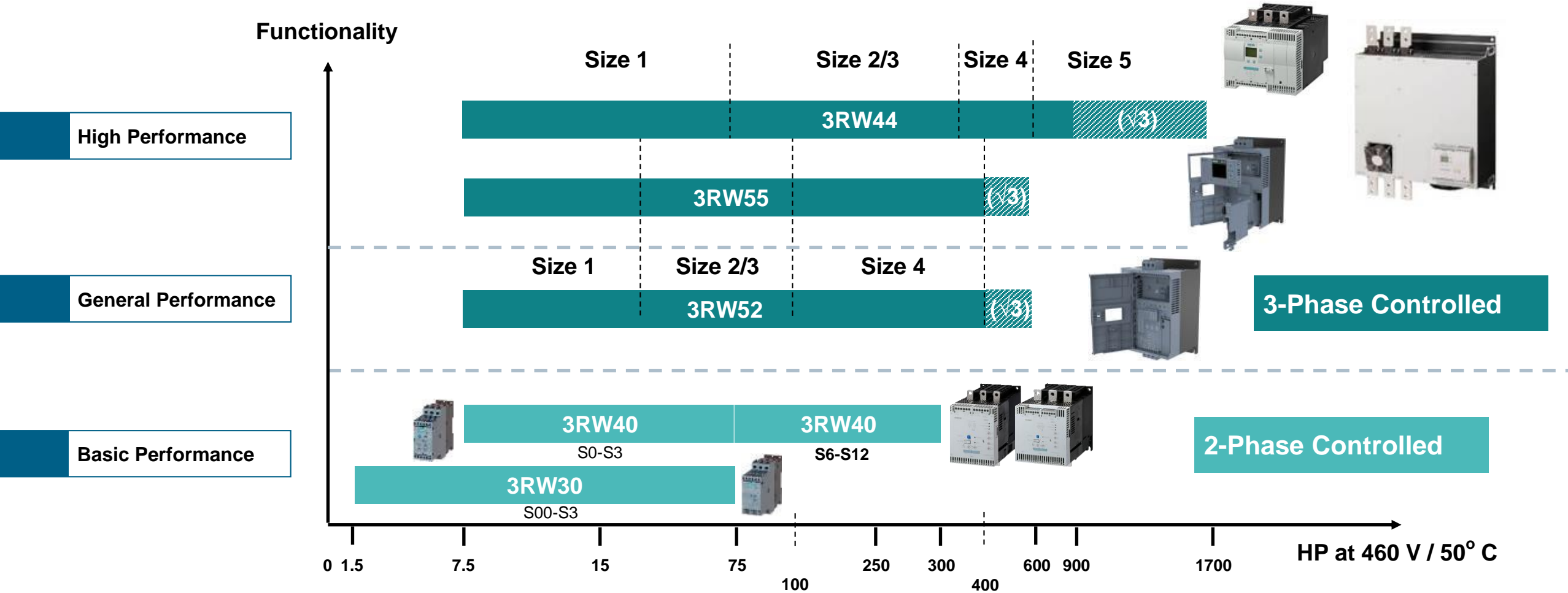


3RW55

Depth
< 200 mm
< 7 ¾ Inch

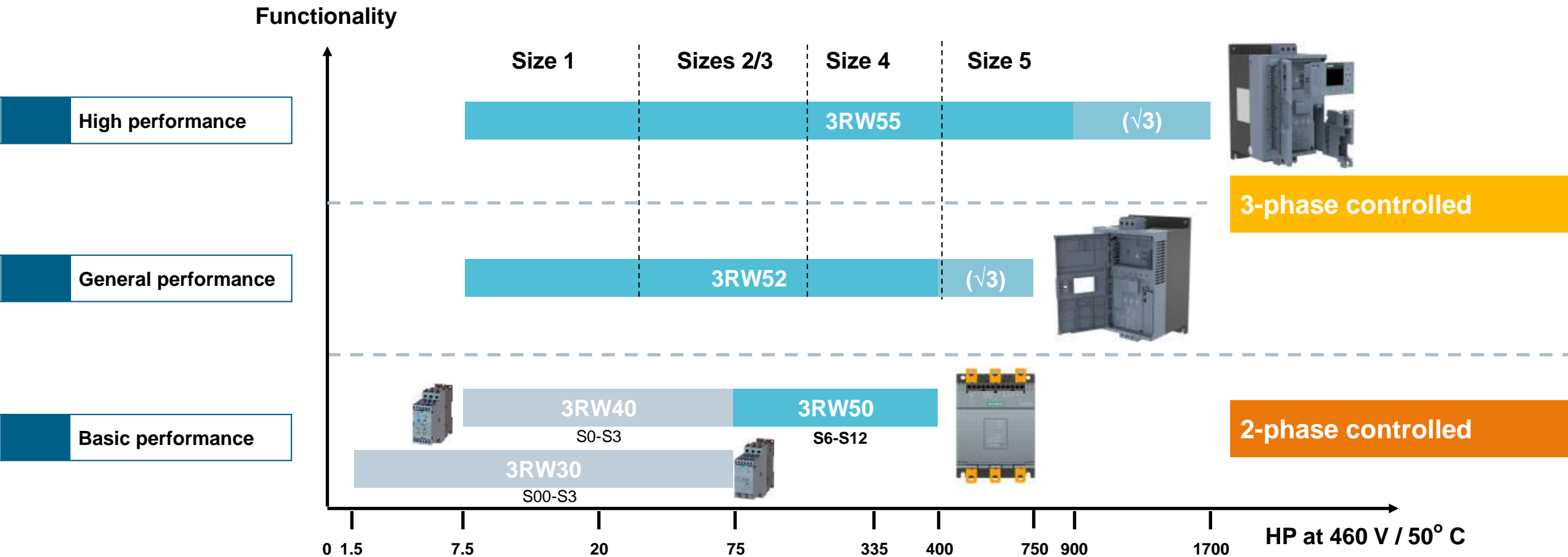


SIRIUS 3RW Soft Starters - Portfolio at a Glance









SIRIUS 3RW Soft Starters at a glance

Portfolio in 2023



Communication/HMI Options

Communication		<table border="1"> <tr> <th>52</th> <th>55</th> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	52	55	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<table border="1"> <tr> <th>52</th> <th>55</th> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	52	55	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<table border="1"> <tr> <th>52</th> <th>55</th> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	52	55	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<table border="1"> <tr> <th>52</th> <th>55</th> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	52	55	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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<p>PROFINET-HF (switched Ethernet)</p>		<p>PROFINET-Std, EtherNet/IP, Modbus-TCP</p>		<p>PROFIBUS</p>		<p>Modbus-RTU</p>																		
HMI			<table border="1"> <tr> <th>52</th> <th>55</th> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>		52	55	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<table border="1"> <tr> <th>52</th> <th>55</th> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>		52	55	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
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<p>HMI High-Feature</p>				<p>HMI Standard</p>																				

SIRIUS 3RW55 – Automatic Parameterization

How to use it

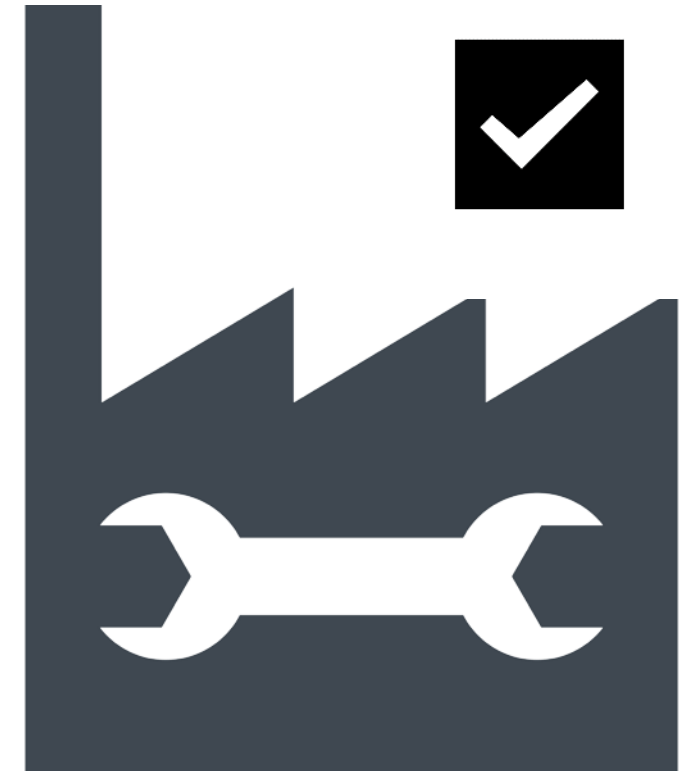
- After setting up the language, date and time during the first power up, you can directly continue with the automatic parameterization and activate it.
- Alternatively: Parameters → Soft starter → Parameter set 1 → automatic parameterization
- You can choose to enter only the desired starting time of the application or also an additional (optional) current limiting value.
- This function remains active, so that the best soft starter settings are guaranteed for the starting procedure.
- The automatic parameterization has no effect in the stopping parameters. These settings need to be addressed by the user as a normal parameterization.



SIRIUS 3RW55 – Condition Monitoring (CM)

How to use it

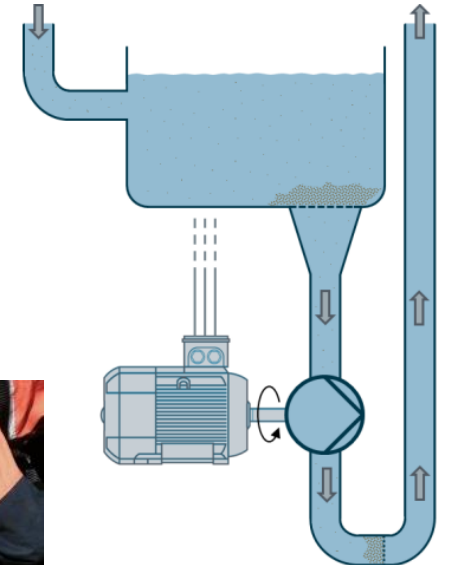
- **Power and current monitoring:** the complete consumption of the starter is monitored and analyzed and **as soon as one set limit is reached, the soft starter detects it and reports it either as warning or error**, with a clear text on the HMI, the yellow LED (HMI and soft starter) and/or over communication.
- **Switching frequency monitoring:** enables the user to monitor how many times the application has been switched on and off. Depending on the application, two different monitoring times can be set:
 - between 2 start commands
 - between a stop command and the next start command
- **Starting time monitoring:** the time that the application takes to start up, which is from giving the start command until the rated operational speed is reached (different from the ramp time)



SIRIUS 3RW55 – Pump Cleaning

Customer benefits

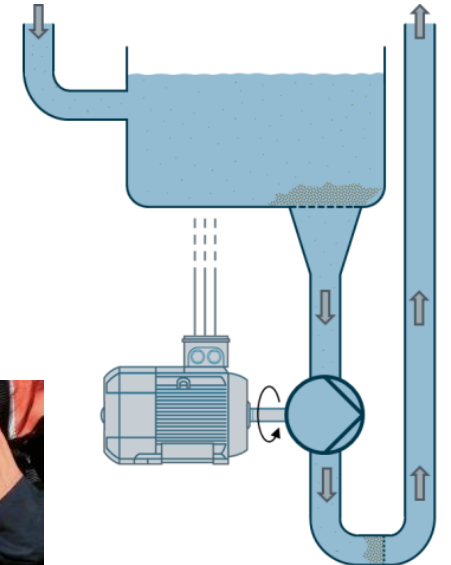
- Enables the user to do maintenance and cleaning procedures in pumping systems:
 - Debris, tissue paper and other solids collect themselves in the impellers of the pumps, especially in sump pumps. These can be cleaned / removed with the pump cleaning function.
- The soft starter initiates a cleaning function, where the soft starter starts the motor forward for a couple of seconds and then the direction of rotation is changed to a backwards operation also for a couple of seconds. This process is then repeated several times (user defined).
- The application runs then normally and maintenance costs can be saved.



SIRIUS 3RW55 – Pump Cleaning

How to use it

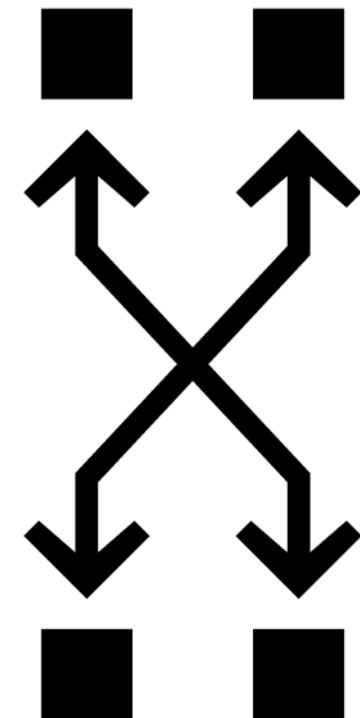
- You find the pump cleaning function as part of the condition monitoring functions.
- The user defines the number of cycles (1x forward + 1x backward) and the time of a half cycle.
- The same starting parameters of the soft starter for normal operation can be used for the pump cleaning function. If others are required, for example a stronger start, a second parameter set can be used.
- No additional hardware is required, since the backwards motion is done with the creep speed function ($\sim 1/3$ of the torque). However, a stronger version (full torque) of the pump cleaning can be used when combining it with the reversing operation (reversing contactors required). See next slide.
- The user requires only to give a “start pump cleaning” command, everything else is done by the soft starter.



SIRIUS 3RW55 – Reversing Operation (at full speed)

Customer benefits

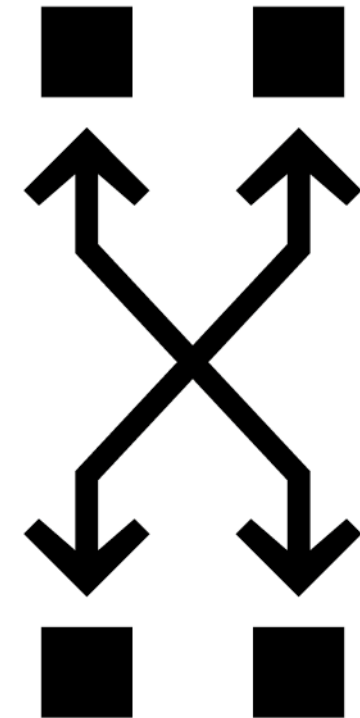
- The reversing operation enables the user the possibility to drive the application forwards and backwards at full speed, with the combination of two external contactors (or reversing combination) without needing an external/additional control.
- The soft starter controls with the programmable outputs the two external contactors and monitors at the same time the direction of rotation of the motor.
- The user can alternatively use the creep speed mode, without using external contactors but with the consideration that the maximum speed and torque during backwards operation is limited to approximately $\frac{1}{3}$ of the rated values.



SIRIUS 3RW55 – Reversing Operation (at full speed)

How to use it

- Two digital outputs require to be parameterized with the respective actions “Reversing contactor right” and “reversing contactor left” and wired to the correspondent contactor.
- After this set up, the command “Motor left” is available in the start button of the HMI and in the menu.
- The creep speed mode is activated in the same way as today, over the process image (HMI, digital input or communication).



SIRIUS 3RW5 Soft Starters

Product data overview



	3RW44	3RW52	3RW55
Rated current	29-1280 A	11-570 A	11-570 A
Main voltage	200-480 V 400-600 V 400-690 V	200-480 V 200-600 V	200-480 V 200-690 V
Bypass system	Integrated (hybrid-technology)		
Number of controlled phases	3		
Connection type	Standard, Inside Delta		
Control voltage	115 V AC 230 V AC	24 V AC/DC 110 - 250 V AC	
Electronic motor overload protection	CLASS 5, 10, 15, 20, 30	CLASS 10A, 10E, 20E	CLASS 5, 10, 15, 20, 30
Thermal motor overload protection	PTC, Klixon, Thermoclick	PTC Typ A, Thermoclick (optional)	PTC Typ A, Thermoclick
Analog Output	---	0-10 V, 4-20 mA (optional)	0-10 V, 4-20 mA
Protocol	PB, PN-HF	PN-Std, PB, MB-TCP, PN-HF, ETH-IP, MB-RTU	
Communication	optional		
Operator panel/display	HMI optional for cabinet door	Standard- and High-Feature-HMI	High-Feature-HMI detachable/optional for cabinet door
PCB coating	all PCBs		



One range for every application
Monitoring, controlling and switching with SIRIUS relays

SIRIUS monitoring relays: a comprehensive portfolio for every application



Position in the portfolio



Electrical variables			Mechanical variables		Temperature	
Line supply and voltage	Current (multi-phase), integrated into the feeder	Current (single-phase), $\cos \varphi$, active current, residual current	Speed	Fill level	Thermistor motor protection	Temperature
<ul style="list-style-type: none"> • 3UG45/46 • 3UG48 (IO-Link) 	<ul style="list-style-type: none"> • 3RR21/22 • 3RR24 (IO-Link) 	<ul style="list-style-type: none"> • 3UG46 • 3UG48 (IO-Link) 	<ul style="list-style-type: none"> • 3UG46 • 3UG48 (IO-Link) 	<ul style="list-style-type: none"> • 3UG45 	<ul style="list-style-type: none"> • 3RN2 	<ul style="list-style-type: none"> • 3RS10/11 • 3RS14/15 (IO-Link)
Early detection and elimination of line supply faults and voltage faults	Monitoring integrated directly into the main current, with integrated current transformers, up to 80A AC - > optimum plant protection, seeing behind the motor	Measuring AC and DC, up to 10A directly; can also be used flexibly with measuring transformer without restriction for AC	Over range or under range of the set speed of motors, gear units, etc.	Avoiding tank overflow or pump dry running	Protecting motors from overheating	Temperature over range/under range
					NEW	

SIRIUS monitoring relays: application areas for monitoring with 3UG4

Covering a wide range of requirements

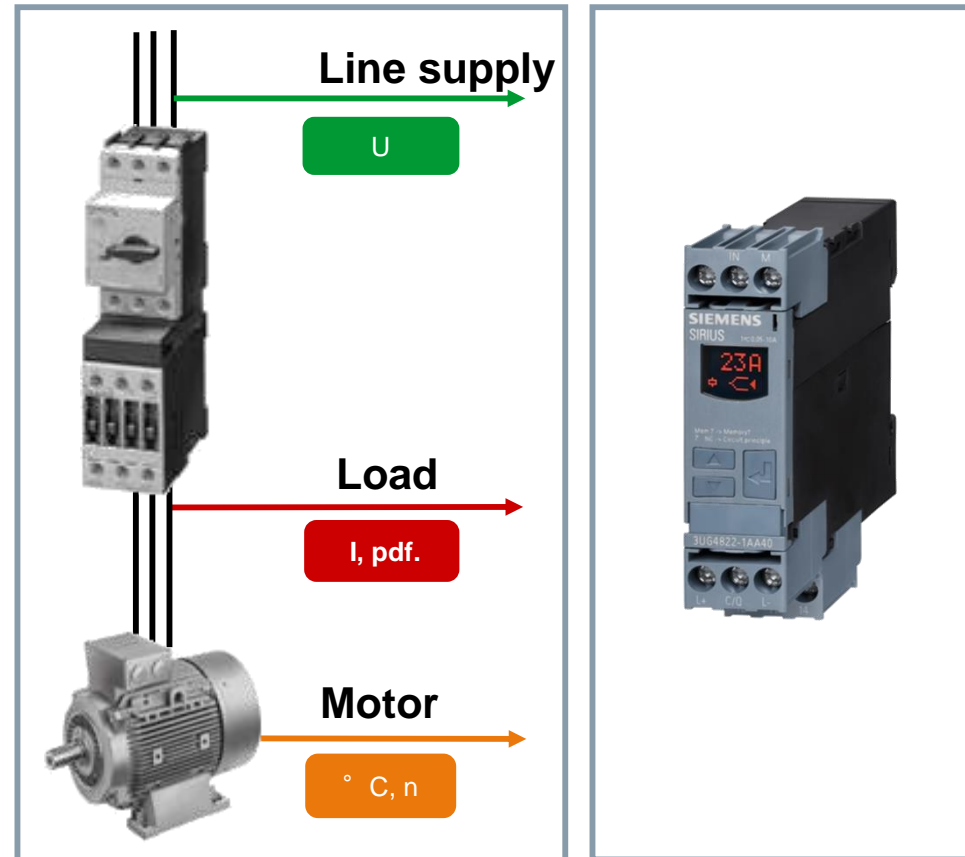


Incoming supply		Load side		Motor		
Electrical variables			Mechanical variables		Temperature	
Line supply	Voltage, current, residual current	Cos φ (p.f.) and active current	Speed	Fill level	Thermistor	Resistance sensor
Phase sequence and failure Overvoltage and under voltage	Functionality of lamps and heating Protection from overvoltage	No-load operation monitoring Belt slippage or torn belt	Conveyor belt Chain drives	Coolants and lubricants Wastewater sector	Heavy starting Braking and reversing Frequent switching	Motor, exhaust and process temperature Liquid coolant

The operating principle of SIRIUS monitoring relays

The SIRIUS monitoring relays operate according to a simple principle:

1. Recording of electrical and non-electrical variables
2. Evaluating
3. Signaling and tripping via output relays



SIRIUS coupling relays + interface converters: transferring, separating, and reproducing information

SIEMENS
Ingenuity for life



3RQ3 coupling relays: slimline + compact

For space-optimized use in the control cabinet:

- Design: 6.2 mm width / minimum space on the mounting rail

3RQ2 coupling relays: universal with wide voltage range

- Unique with **wide range supply voltage** of 24 to 240 V AC/DC for global use
- In innovative **industrial housing** with removable terminals

LZS coupling relays: powerful

- **Higher power** - for switching larger loads
- **Plug-in relays** for fast relay replacement

3TG10 power relays: solution for the performance range below S00

- For **restricted installation conditions** (width of only 36 mm)
- Flexible installation / position-independent
- High power rating (20 A / 400 V AC)

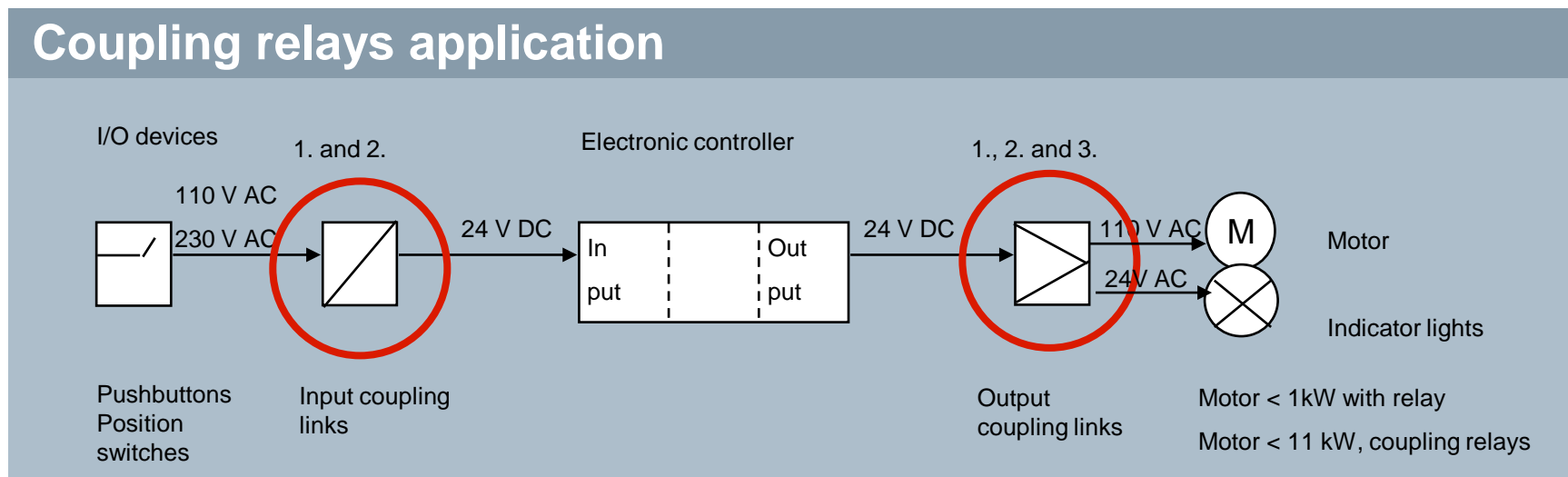
3RS70 interface converters: for analog standard and universal signals

- For **analog signal transfer** to a PLC or measuring instrument in a control cabinet door
- For **galvanic isolation** of analog inputs and outputs of the controller

Introduction

Three simultaneous functions of the coupling relays

1. Electrical separation of circuits
2. Transformation of voltages (AC \leftrightarrow DC, 24V \leftrightarrow 240V)
3. Signal reproduction and amplification



Thank You For Your Attention!



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