

# SIL-Relays of the SAFESERIES

## in combination with distributed control systems

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A distributed control system is characterised by a high availability of hardware and software components. Weidmüller offers for the customer the advantage that his safety relays are working reliably with different distributed control systems, proven by extensive integration tests.



Available for

Order No.	1303890000	1303760000	1304040000	1319270000	2500980000
Type	SCS 24VDC P1SIL3DS	SCS 24VDC P1SIL3DS M	SCS 24VDC P1SIL3DS MG3	SCS 24VDC P2SIL3DSES	SCS 24VDC P1SIL3DS I
<b>YOKOGAWA</b> ProSafe RS digital output card SDV 541	●	●	●	●	
<b>SCHNEIDER ELECTRIC</b> Compatibility with Tricon™, Trident™ and Tri-GP™ systems					●
<b>HONEYWELL</b> Can be connected to classic digital output: • Safety Manager IO-Module type FC-SDO-824 und FC-SDOL-0424 • Universal Safety IO-Module type FC-RUSIO-3224	●	●	●	●	
<b>HIMA</b> HIMax System, output module X-DO 2401	●	●	●		
<b>EMERSON</b> Tested according Delta V SIS test protocols with: • Simplex CHARM LSDD 24VDC DTA (KL3302X1-BA1) • Redundant CHARM LSDD 24VDC DTA (R) (KL3302X1-BB1) • Simplex CHARM LSDD 24VDC ETA (KL3302X1-BC1)	●	●	●		
Tested according Delta V SIS test protocols with: • Simplex CHARM LSDD 24VDC DTA (KL3302X1-BA1) • Redundant CHARM LSDD 24VDC DTA (R) (KL3302X1-BB1)					●
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**SIL3 relays**

- With and without monitoring circuit
- Wide-range input voltage in the monitoring circuit
- Externally accessible fuse
- TÜV-certified “Approved Safety Function”

**SCS 24 V DC P1SIL3DS**



**Technical data**

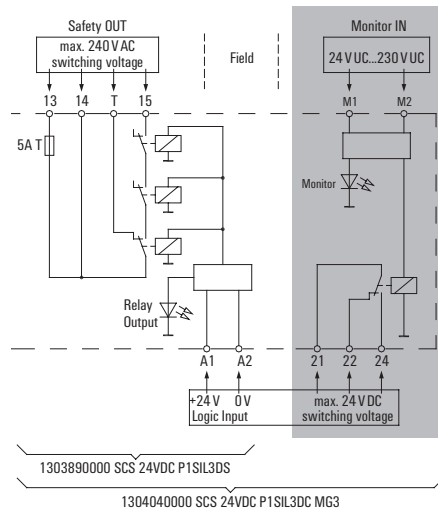
<b>Temperatures</b>	
Ambient temperature (operational)	-25...50 °C
Storage temperature	-40...85 °C
<b>General data</b>	
Noxious gas resistance to EN 60068-2-60	Yes (art. No.: 1304040000 only)
<b>Input (safety circuit) (A1, A2)</b>	
Rated control voltage	24 V DC ± 20%
Guaranteed current consumption of 24 VDC -10%	35 mA
Power consumption	42 mA
Status indicator	LED yellow
<b>Input (monitor circuit) (M1, M2)</b>	
Rated control voltage	24 V UC...230 V UC ± 10 %
Current consumption	23 mA @ 24 V DC, 4.4 mA @ 230 V AC
Status indicator	LED yellow
<b>Output (safety circuit) (13, 14, 15)</b>	
Contact design	1 x de-energised to safe (NO contact)
max. switching current, internal fuse	5 A (refer to derating curve)
max. switching current, external fuse	5 A (refer to derating curve)
max. permitted switching voltage	250 V AC / 30 V DC
max. permitted switching current	5 A
min. switching power	10 mA @ 12 V
max. switching power	1250 VA
Switch-on time	typ. 7 ms
Base material of the contact	AgNi 0.15 gold flashed
Internal fuse	5 A time-lag
External back-up fuse	5 A time lag
Short-circuit-proof	No
<b>Output (monitor circuit) (21, 22, 24)</b>	
Contact design	CO contact
max. permitted switching voltage	24 V DC
max. permitted switching current	30 mA
min. switching power	1 mA @ 1 V
Base material of the contact	AgNi 5µm Au
Switch-on time	typ. 17 ms
Short-circuit-proof	No
<b>Insulation coordinates</b>	
Rated voltage	300 V
Creepage and clearance distance input - output	≥ 5.5 mm
Creepage and clearance distance output - output	≥ 5.5 mm
Dielectric strength, Input/Output	4 kV <sub>eff</sub> / 1 min
Dielectric strength output - output	4 kV <sub>eff</sub> / 1 min
Dielectric strength to mounting rail	4 kV <sub>eff</sub> / 1 Min.
Impulse withstand voltage	6 kV (1.2/50 µs)
Overvoltage category	III
Pollution degree	2
<b>Further details of approvals / standards</b>	
Standards	EN 50178, EN 61000, EN 61326-3-2
Approvals	CE; cULus; EAC; FUSAFETY
<b>Dimensions</b>	
Clamping range (nominal / min. / max.)	1.5 / 0.13 / 2.5 mm <sup>2</sup>
Depth x width x height	114.1 / 22.5 / 117.3 mm
<b>Note</b>	

**Ordering data**

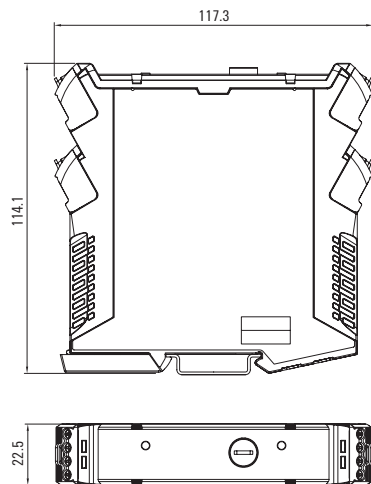
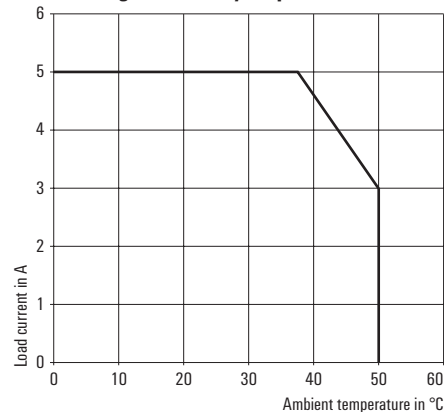
	with monitoring
	without monitoring
	with monitoring and G3 gas-corrosion resistant
<b>Note</b>	

Type	Qty.	Order No.
SCS 24VDC P1SIL3DS M	1	1303760000
SCS 24VDC P1SIL3DS	1	1303890000
SCS 24VDC P1SIL3DS MG3	1	1304040000

The SCS 24VDC P1SIL3DS safety relay is used in areas that require a functionally safe shutdown. This component fulfils the requirements of EN 61508, SIL 3.



**Derating curve safety output**



SIL3 relay

- Unresponsive to test pulses from the Triconex® output modules
- Proof of compatibility is available for use with the Tricon™, Trident™ and Tri-GP™ systems.
- Externally accessible fuse
- TÜV-certified “Approved Safety Function”

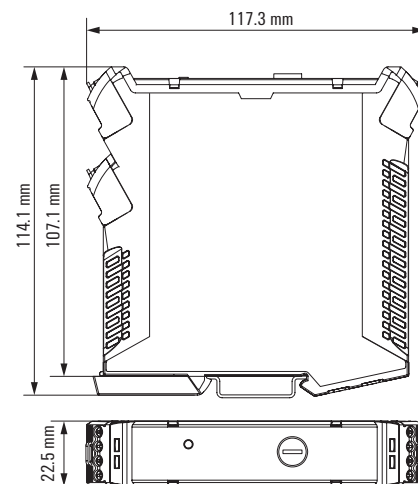
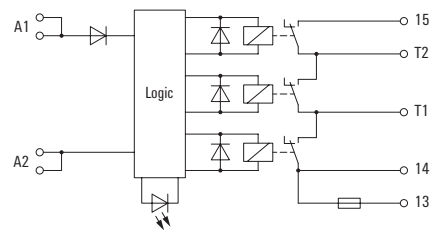
SCS 24 V DC P1SIL3DS I



The SCS 24VDC P1SIL3DS I safety relay is used in areas that require a functionally safe shutdown. This component fulfils the requirements of EN 61508, SIL 3.

Technical data

<b>Temperatures</b>	
Ambient temperature (operational)	-25...50 °C
Storage temperature	-40...85 °C
<b>Input (safety circuit) (A1, A2)</b>	
Rated control voltage	24 V DC (16...36 V DC)
Power consumption	50 mA
Status indicator	LED yellow
<b>Output (safety circuit) (13, 14, 15)</b>	
Contact design	1 x de-energised to safe (NO contact)
max. switching current, internal fuse	5 A
max. switching current, external fuse	5 A
max. permitted switching voltage	250 V AC / 30 V DC
max. permitted switching current	5 A
min. switching power	10 mA @ 12 V
max. switching power	1250 VA
Switch-on time	≤ 25 ms
Base material of the contact	AgNi
Internal fuse	5 A time-lag
External back-up fuse	5 A time lag
Short-circuit-proof	No
<b>Insulation coordinates</b>	
Rated voltage	300 V
Creepage and clearance distance input - output	≥ 6 mm
Dielectric strength, Input/Output	3.51 kV <sub>eff</sub> /5 s
Dielectric strength to mounting rail	
Impulse withstand voltage	6 kV (1.2/50 µs)
Overtoltage category	III
Pollution degree	2
<b>Further details of approvals / standards</b>	
Standards	EN 61010-2:2013 + AC:2013, EN 61326-1:2013, EN 61326-3-1:2008, EN 61326-3-2:2008
Approvals	CE; cULus; EAC; FUSAFETY



<b>Dimensions</b>	
Clamping range (nominal / min. / max.)	mm <sup>2</sup> 1.5 / 0.13 / 2.5
Depth x width x height	mm 114.1 / 22.5 / 117.3
<b>Note</b>	

Ordering data

with monitoring		
<b>Type</b>	<b>Qty.</b>	<b>Order No.</b>
SCS 24VDC P1SIL3DS I	1	2500980000
<b>Note</b>		

**SIL3 relays**

- Energized/de-energized to safe
- All-pole disconnection possible
- Test inputs for testing the relay contacts
- Externally accessible fuse
- TÜV-certified “Approved Safety Function”

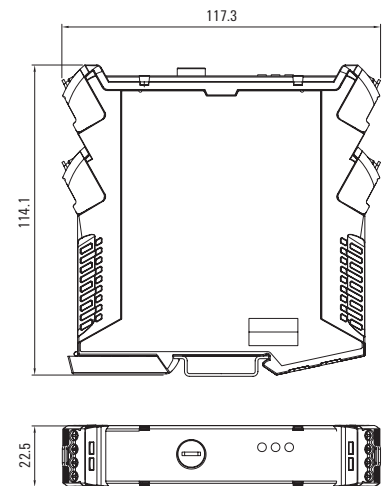
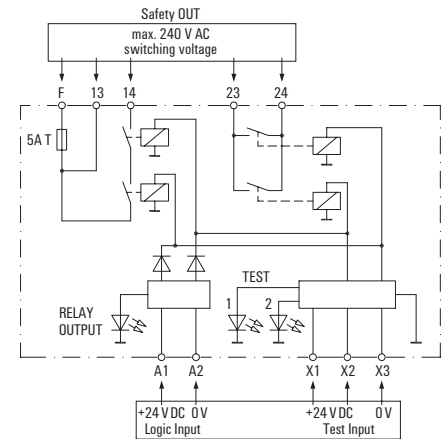
**SCS 24 V DC P2SIL3DSES**



The safety relay SCS 24VDC P2SIL3DSES is used in areas that require functionally safe deactivation or activation. The requirements according to EN 61508, SIL3 can be fulfilled with this module.

**Technical data**

<b>Temperatures</b>	
Ambient temperature (operational)	-25 °C...50 °C
Storage temperature	-40 °C...85 °C
<b>Input (safety circuit) (A1, A2)</b>	
Rated control voltage	24 V DC -15 / +20%
Guaranteed current consumption of 24 VDC -10%	35 mA
Power consumption	45 mA
Status indicator	LED yellow
<b>Test inputs (X1, X2, X3)</b>	
Rated control voltage	24 V DC
Status indicator	LED red flashing: test input is triggered
Number of test inputs	2
<b>Output (safety circuit) (13, 14, 23, 24)</b>	
Contact design	1 x de-energised to safe (NO contact), 1 x energised to safe (NO contact)
max. switching current, internal fuse	5 A (refer to derating curve)
max. switching current, external fuse	5 A (refer to derating curve)
max. permitted switching voltage	250 V AC
max. permitted switching current	5 A
min. switching power	10 mA @ 12 V
max. switching power	1250 VA
Switch-on time	< 5,5 ms (DTS), < 5 ms (ETS)
Base material of the contact	AgNi 0.15 gold flashed
Internal fuse	5 A time-lag
External back-up fuse	5 A time lag
Short-circuit-proof	No
<b>Insulation coordinates</b>	
Rated voltage	300 V
Creepage and clearance distance input - output	≥ 5.5 mm
Creepage and clearance distance output - output	≥ 5.5 mm
Dielectric strength, Input/Output	4 kV <sub>eff</sub> / 1 min
Dielectric strength output - output	4 kV <sub>eff</sub> / 1 min
Dielectric strength to mounting rail	4 kV <sub>eff</sub> / 1 Min.
Impulse withstand voltage	6 kV (1.2/50 µs)
Overvoltage category	III
Pollution degree	2
<b>Further details of approvals / standards</b>	
Standards	EN 50178, EN 61000, EN 61326-3-2
Approvals	CE; EAC; FUSAFETY



<b>Dimensions</b>	
Clamping range (nominal / min. / max.)	mm <sup>2</sup> 1.5 / 0.13 / 2.5
Depth x width x height	mm 114.1 / 22.5 / 117.3
<b>Note</b>	

**Ordering data**

Type	Qty.	Order No.
SCS 24VDC P2SIL3DSES	1	1319270000

<b>Note</b>	
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SIL3 relays

- Positively-driven contacts
- 2-channel design
- Insert according to EN 50156
- TÜV-certified “Approved Safety Function”

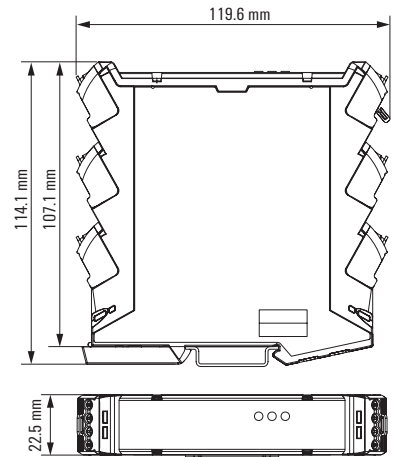
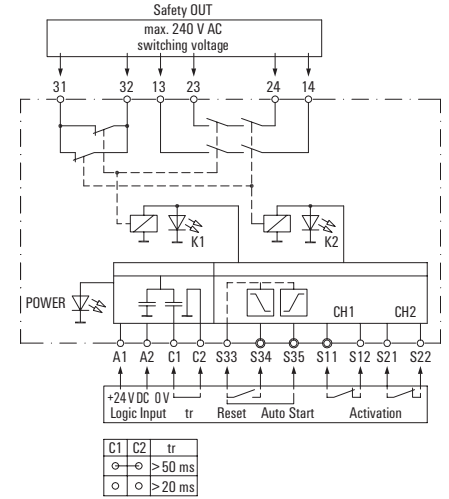
SCS 24 V DC P2SIL3ES



The feed-in of fuel must be interrupted as soon as a boiler plant reaches any safety criterion limits. The safety relay SCS 24VDC P2SIL3ES enables you to carry out a safety shutdown of the fuel supply, to safety level SIL 3.

Technical data

<b>Temperatures</b>	
Ambient temperature (operational)	-25 °C...55 °C
Storage temperature	-40 °C...85 °C
<b>Start circuit (S33, S34, S35)</b>	
Operating voltage	22 V DC, from internal power supply
Function	falling edge (button via S33/S34), rising edge (permanent bridge via S33/S35)
<b>Input (supply) (A1, A2, C1, C2)</b>	
Rated control voltage	24 V DC ±15 %, 24 VDC +15% / -10% during auto-start
Current consumption	55 mA (release circuit enabled), 6 mA (release circuit not enabled)
Guaranteed current consumption at 24 V DC -10%	35 mA
Response time	with bridge via C1/C2: typ. 50 ms, without bridge via C1/C2: typ. 20 ms
Status display	LED green: supply, Yellow LED: signal
Short-circuit detection	Yes, max. 4 s up to disconnection (thermistor)
<b>Monitoring circuit (S11, S12, S21, S22)</b>	
Operating voltage	22 V DC, from internal power supply
Input	2, each externally bridgeable
<b>Output (release circuit) (13, 14, 23, 24)</b>	
Contact version	2 NO positively-driven (EN 50205 type B)
Switching voltage AC, max.	250.000000 V
max. permitted switching current	5 A
min. switching power	10 mA @ 12 V
max. switching power	1250 VA
Switch-on time	55 ms (C1/C2 bridged, switched via A1/A2), 30 ms (opening/closing of monitoring circuit)
Switch-off time	55 ms (C1/C2 bridged, switched via A1/A2), 15 ms (opening/closing of monitoring circuit)
Contact base material	AgSnO
max. switching current, external fuse	5 A
external back-up fuse	5 A time lag
<b>Feedback output (31, 32)</b>	
Contact version	1 NC positively-driven (EN 50205 type B)
Switching voltage AC, max.	250 V
Max. switching current	1 A
<b>Insulation coordinates</b>	
Rated voltage	300 V
Creepage and clearance distance input - output	≥ 5.5 mm
Creepage and clearance distance output - output	≥ 5.5 mm
Dielectric strength, Input/Output	4 kV <sub>eff</sub> / 1 min
Dielectric strength output - output	4 kV <sub>eff</sub> / 1 min
Dielectric strength to mounting rail	4 kV <sub>eff</sub> / 1 Min.
Impulse withstand voltage	6 kV (1.2/50 µs)
Overvoltage category	III
Pollution degree	2
<b>Further details of approvals / standards</b>	
Standards	EN 50178, EN 61000, EN 61326-3-2, EN ISO 13849-1 (PLe)
Approvals	CE, EAC, FUSAFETY
<b>Dimensions</b>	
Clamping range (nominal / min. / max.)	mm <sup>2</sup> 1.5 / 0.13 / 2.5
Depth x width x height	mm 114.1 / 22.5 / 119.6
<b>Note</b>	



Ordering data

Type	Qty.	Order No.
SCS 24VDC P2SIL3ES	1	1319280000
<b>Note</b>		