



SSP

Safety System Products

S2 series

Standard safety relay 1 safety function

Your advantages

[To the downloads ►](#)



we simplify safety

S2 series

Monitoring of: • [Potential-free](#) signals

- OSSD signals

Functions: • Manual or automatic reset

- EDM (External Device Monitoring)

Safety contacts: • 3 x No contact DC13, 4A

Signal contacts: • 1 x Opener 24 VDC / 1 A

- Setting via rotary switch

Clearance and creepage	to IEC/EN 60664-1
------------------------	-------------------

General data

Type designation	S2 series
Item number	SP-K-70-001-00
Interference immunity	to EMC Directive
Mounting	standard DIN rail to EN 60715
Terminal designations	EN 60947-1
PFHD relay output	$\leq 1.25 \times 10^8$ / h
PFDavg relay output	$\leq 5.3 \times 10^5$
DC	high
CCF (ISO 13849-1)	> 65 points

Safety data

Category (EN ISO 13849-1:2015)	Cat. 4
SIL (acc. IEC 62061)	suitable for applications in SIL 3

Environmental conditions

Ambient temperature	-25 °C ... +60 °C (non condensing) °C
---------------------	---------------------------------------



Safety System Products

S2 series

Protection class	Enclosure: IP40, Terminals: IP20, Clearance: IP54
Max. storage temperature	-40 °C ... +85 °C (non condensing) °C
Resistance to shock	30 g/11 ms
Resistance to vibrationsto EN 60068-2-6	10 ... 55 Hz, Amplitude 0.35 mm
Altitude	max. 2,000 m
Contamination level	2

Electrical data

Rated operating voltage Ue	24 VDC / 24 VAC -20%/+20% V
Power Supply	SELV-Netzteil network as per DIN EN 60950; safety transformer as per DIN EN 61558-2-6 (AC); mains power supply must harmonise with device safety (characteristic/melting property) so that triggering is assured
Frequency range	50 Hz/60 Hz
Power consumption	2.4 W, 7 VA
Protection of the operating voltage	we recommend a circuit breaker type Z (max. 16 A) or a fine fuse (max. 15 A, delayed action)
UL Rating of external fuse:	max. 16 A, only use fuses in accordance with UL 248 series

Isolation parameters acc. to IEC 60664-1

Rated insulation voltage Ui

- safety contacts	250 V
Safety outputs	50 V

Rated impulse withstand voltage Uimp

- safety contacts 13-14, 23-24	6 kV
- safety contact 33-34	4 kV
-Safety outputs	0.8 kV
Overvoltage category	III
Pick-up delay	< 150 ms
Dropout delay emergency-stop	< 10 ms
Dropout delay power failure	< 10 ms
Bridging voltage drop	typ. 5 ms



Safety System Products

S2 series

Standby after power switched on [s] < 1,5 s

Terminal blocks

Single-wire (rigid) or fine-wire (flexible) 0.2 ... 2.5 mm²

Fine-wired with wire sleeve 0.25 ... 2.5 mm²

0.5 Nm

Control current circuits/inputs

Inputs S12, S22 24 VDC/8 mA

Inputs X2, X3, X7 24 VDC/8 mA

Clock outputs S11, S21 > 20 VDC, 10 mA per output

Cable length 1500 m with 1.5 mm²; 2500 m with 2.5 mm²

Conduction resistance max. 40 Ω

Relay outputs

Switching capacity of the safety contacts contacts 13-14, 23-24, 33-34: max. 250 V, 6 A ohms. min. 10 VDC / 10 mA (Derating see 2.5)

Fuse rating of the safety contacts external (Ik = 1000 A) acc. to EN 60947-5-1 Safety fuse 10 A quick blow. 6 A slow blow

Utilisation category to EN 60947-5-1 AC-15: 230 V / 4 A DC-13: 24 V / 4 A

Fuse rating for the auxiliary contact 41-42: 24 VDC / 1 A

Safety contact values safety fuse 2.5 A quick blow, 2 A slow blow

Electrical service life (nominal load) see 2.5 (operating manual) Years

mechanical lifespan 10 million switching cycles

resistance max. 100 mΩ, AgNi, self-cleaning, positive action

Max. switching cycles / minute 20

Inductive consumers provision is to be made for suitable protective wiring for suppression

Mechanical data

Housing material glass-fibre reinforced thermoplastic. ventilated

Weight 175 g

S2 series

LED diagnostics

Diagnose function

6.1 LED indications

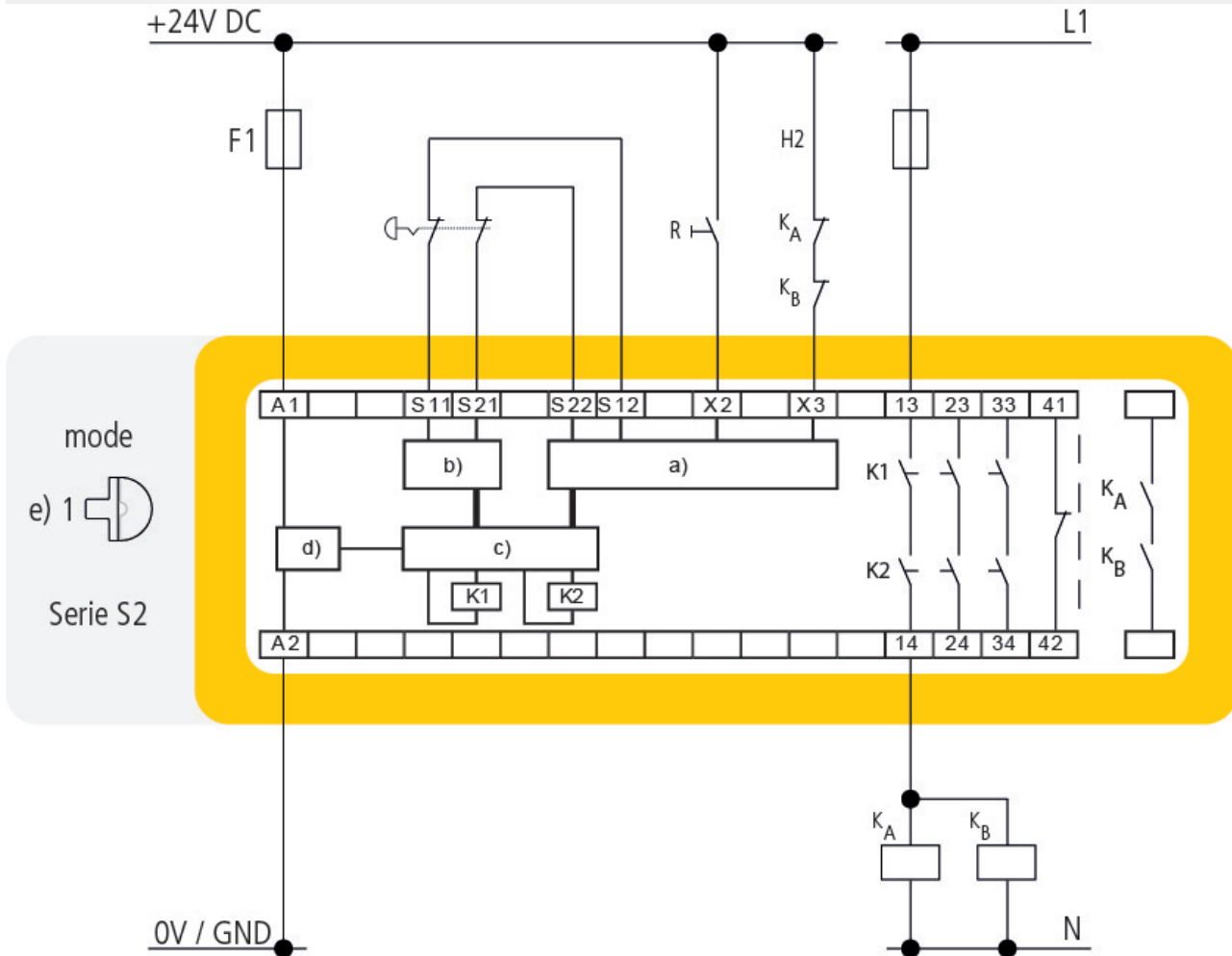
LED	Function	Display type
RUN	Ready for operation	Continuously lit
	Not a valid application	Flashes
In 1	Eingang S12 geschlossen	Continuously lit
	Time window for synchronicity exceeded	Flashes quickly
	Second channel, input S22 has not opened	Flashes slowly
In 2	Input S22 closed	Continuously lit
	Time window for synchronicity exceeded	Flashes quickly
	Second channel, input S12 has not opened	Flashes slowly
Out	Safety outputs ON	Continuously lit
	Safety outputs waiting for start (input X2)	Flashes slowly
	Feedback circuit not closed (input X3)	Flashes slowly

Single flashing of all LEDs with mains on

S2 series

Electrical drawings

Connection example 1



Legend

- a) Safety inputs
- b) Clock output
- c) CPU
- d) Power supply
- e) Rotary knob for programming

S2 series

Downloads

- SISTEMA - Data V 4.1
- Operating Manual
- Certificate
- EPLAN-Data
- CAD Data