



Safety System Products

S2 series

Standard safety relay 1 safety function

Your advantages

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Safety System Products

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

General data

Type designation	S2 series
Interference immunity	to EMC Directive
Item number	SP-K-70-001-00
Mounting	standard DIN rail to EN 60715
Terminal designations	EN 60947-1
PFHD relay output	≤ 1.25 x 10□⁸ / h
PFDavg relay output	≤ 5.3 x 10□⁵
DC	high

Safety data

Category (EN ISO 13849-1:2015)	Cat. 4
SIL (acc. IEC 62061)	suitable for applications in SIL 3
CCF (ISO 13849-1)	> 65 points

Environmental conditions

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

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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 consuption	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
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

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	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
Dimensions	
Height	98 mm
Width	22,5 mm
Length	115 mm

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LED diagnostics

Diagnose function

6.1 LED indications

LED	Function	Display type
RUN	Ready for operation	Continuously lit
	Not a valid appication	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

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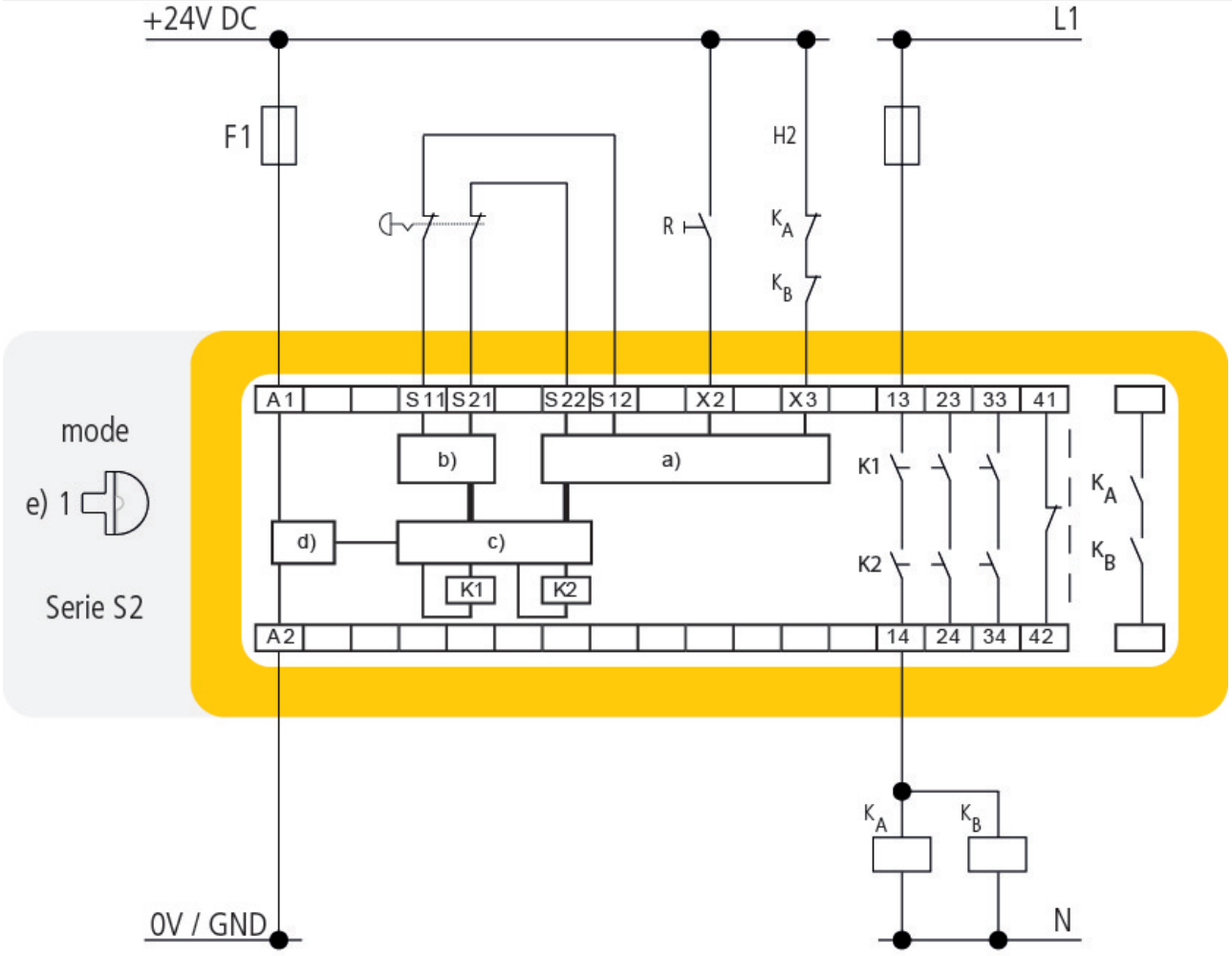
Electrical drawings

Connection example 1



Legend

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

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Downloads

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