



SSP

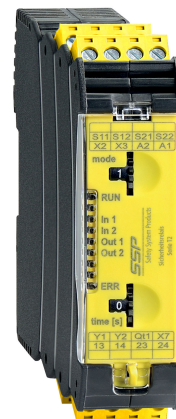
Safety System Products

T2 series

Time delay safety relay 1 safety function

Your advantages

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we simplify safety

T2 series

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

- OSSD signals

Functions: • Time-delayed OSSD output

- Manual or automatic reset
- EDM (External Device Monitoring)
- Adjustable time delay of up to 30 seconds

Safety contacts: • 2 x relay output DC13, 4 A (STOP 0)

- 1 x Semiconductor output 24 VDC / 2 A (STOP 1)

Signal contacts: • 1 x Semiconductor output 24 VDC / 100 mA (STOP 0)

- 1 x Semiconductor output 24 VDC / 100 mA (STOP 1)

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

Type designation	T2 series
Item number	SP-K-70-001-02
Interference immunity	to EMC Directive
Mounting	standard DIN rail to EN 60715
Terminal designations	EN 60947-1
PFHD semi-conductor output	$\leq 2.66 \times 10^9$ / h
PFDAvg semi-conductor output	$\leq 2.42 \times 10^5$
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
Service life TM (EN ISO 13849-1)	20 Years

Safety data

Category (EN ISO 13849-1:2015)	Cat. 4
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T2 series

SIL (acc. IEC 62061)	3
Approvals	IEC/EN 60204-1, EN 60947-5-1; EN ISO 13849-1, IEC/EN 62061, IEC 61508
Environmental conditions	
Ambient temperature	-25 °C ... +60 °C (non condensing) °C
Max. storage temperature	-40 °C ... +85 °C (non condensing) °C
Protection class	Enclosure: IP40, Terminals: IP20, Clearance: IP54
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% residual ripple max. 10% 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	-
Power consumption	3 W (+ load of the safety outputs)
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

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- 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
Terminal blocks	
Single-wire (rigid) or fine-wire (flexible)	0.2 ... 2.5 mm ²
Fine-wired with wire sleeve	0.25 ... 2.5 mm ²
	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 mm ² ; 2500 m with 2.5 mm ²
Conduction resistance	max. 40 Ω
Relay outputs	
Switching capacity of the safety contacts	contacts 13-14, 23-24: 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
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
Semi-conductor outputs	
Switching capacity of the safety outputs Q	Qt1: max. 2 A
Voltage drop	< 0.5 V



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residual current	< 1 mA
Max. fuse rating of the safety outputs	refer to „Operating voltage“
Switching capacity of signaling outputs	semiconductor outputs Y1: 24 VDC/100 mA
Fuse rating of the signalling outputs	internal electronic trip, tripping current > 100 mA
Utilisation category according to IEC 60947-5-1	DC-13: 24 V / 2A < 1 ms (negative), < 100 µs (positive)

Mechanical data

Housing material	glass-fibre reinforced thermoplastic. ventilated
Weight	185 g

LED diagnostics

T2 series

Diagnose function

6.1 LED indications

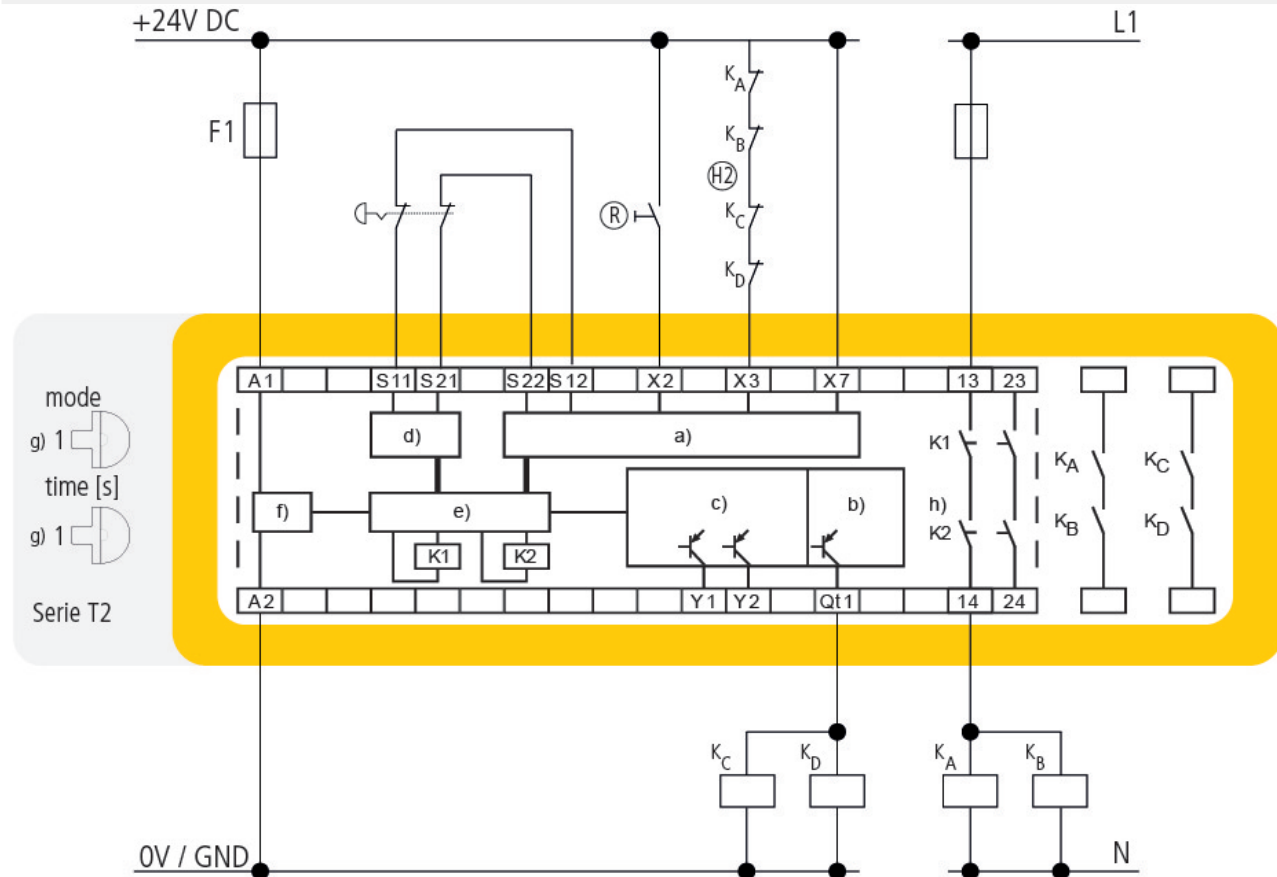
LED	Function	Display type
RUN	Ready for operation	Continuously lit
	Not a valid application	Flashes
In 1	Eingang S12 geschlossen	Continuously lit
	Time window for synchronicity exceeded	Flashes quickly
	Second channel, input S22 has not opened	Flashes slowly
In 2	Input S22 closed	Continuously lit
	Time window for synchronicity exceeded	Flashes quickly
	Second channel, input S12 has not opened	Flashes slowly
Out1	Safety outputs ON	Continuously lit
	No release signal on input X7	Flashes quickly
	Safety outputs waiting for start (input X2)	Flashes slowly
Out2	Feedback circuit not closed (input X3)	Flashes slowly
	Safety outputs ON	Continuously lit
	No release signal on input X7	Flashes quickly
	Safety outputs waiting for start (input X2)	Flashes slowly
Out2	Feedback circuit not closed (input X3)	Flashes slowly

Single flashing of all LEDs with mains on

T2 series

Electrical drawings

Connection example 1



Legend

- a) Safety inputs
- b) Safety outputs STOP 1
- c) Signalling outputs Y1 STOP 0
Y2 STOP 1
- d) Clock outputs
- e) Processing
- f) Power
- g) Rotary knob for programming
- h) Safety outputs STOP 0

T2 series

Downloads

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