Time-Delayed Safety Expansion Unit SRTC

SRTC is an expansion unit which can be used with any basic unit of the ZANDER SR series to enable a delayed shutdown of machine components. This function is required e.g. to move a machine tool back to its start position, if this is safer than directly stopping the drive unit. SRTC was designed as a component of a modular system: any combination of one or more SRTC and non-delayed expansion units SREC may be connected to each other by a few wires, making it possible to realize a total system with several different delay-times and the individually needed number of safety contacts.



- *Stop category: 1*
- *Up to safety category: 3*
- *Control: basic device of the SR series*
- *Force guided safety contacts with time-delay: 3*
- *Modular expandable and combinable emergency stop system*
- *Fault monitoring by basic device*
- *According to EN60204-1, VDE0113-1, EN954-1*

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Application / Installation

As many as desired SRTC can be connected to a basic emergency stop relay, so the number of safety contacts can be customized to the individual needs.

If the basic device is activated the output relays of the SRTC are directly switched on. If the emergency button is pressed the basis device are switched off immediately, however, the output relays of the SRTC will be switched off after the delay time adjusted at the potentiometer has elapsed. The supply voltage must remain applied during the timing period.

The SREC in combination with a basic device was designed to comply with the requirements of EN 60204-1 for emergency stop devices, stop category 1, and the demands of EN 954-1, up to safety category 3.

A stand alone operating without a basic device is not possible. According to EN 60204-1 the unit is designed to be used in switch cabinets with a minimum environment protection of IP54. The mounting is made on a 35 mm DIN-rail.

Provided that the system has been installed properly, no maintenance is necessary.

Safety Warnings

- **Installation and operation must be carried out by qualified personnel only.**
- **The electrical installation must be performed after disconnecting the device and the machine from the mains supply.**
- **The wiring must be carried out according to the instructions of this operating manual, or the safety function may be lost.**
- **Opening the device, any manipulation of the device and the avoidance of the safety facilities are not permitted.**
- **All relevant safety regulations and standards must be attended to.**
- **Non-observance of the safety regulations may cause death, severe injuries or substantial damage to property.**

Technical Design

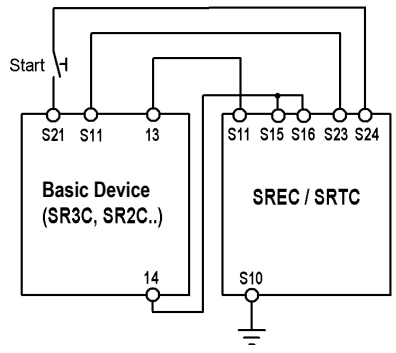
The SRTC has got force guided safety contacts so that faults can be recognized by the basic emergency stop relay via the auxiliary contacts S23-S24. The relays are actuated via the terminals S15 and S16.

Using electronic components, a very high repeat accuracy of the adjusted time is achieved. In order to obtain the required degree of safety, all functional units are designed redundant and with diversity. At the terminal S11 a control voltage of DC 24V is provided which is connected to the actuating safety contact of the basic device. The supply voltage is applied to terminals A1 and A2. The SRTC is available for the supply voltages AC 230V, AC 115V and AC/DC 24V.

Connection of a SREC to a Basic Device

The connection of the expansion unit SRTC to the basic device is made by only 4 lines: One safety contact of the basic device (e.g. 13-14) controls the relays of the SRTC (S11 and S15/ S16).

Two lines at S23 and S24 are needed for the feedback / fault monitoring. Through this a restart of the complete safety chain is inhibited if a fault in the SRTC occurs. Besides of internal faults earth faults of the control lines are recognized, too.



Connection of one SRTC to a basic device (e.g. SR3C, SR2C)

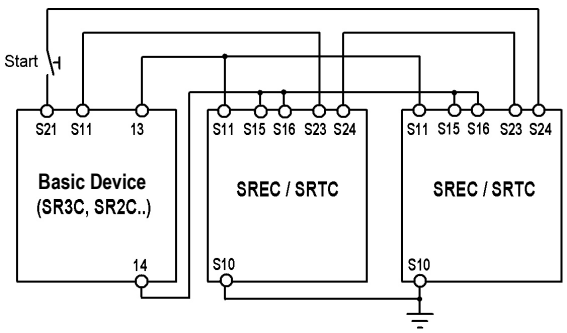
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Connection of several SRTC to a Basic Device

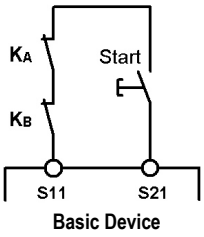
If more than one SRTC shall be connected to a basic device, the terminals S11 of all expansion units must be connected in parallel, as well as the terminals S15/S16.



Connection of several SRTC to a basic device

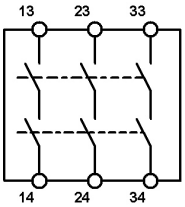
Feedback Circuit

Contactors connected to the SRTC or the basic device are monitored via the feedback circuit. K_A , K_B are force guided contacts of the connected contactor or expansion module, up to category 3.

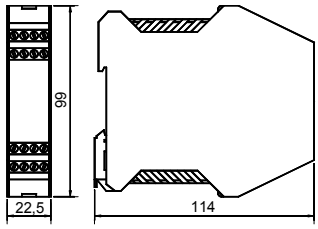


Safety Contacts

The SRTC provides three force guided redundant safety contacts (13-14, 23-24, 33-34, NO).



Technical Data	
Conforms to standards	VDE 0113 part 1: 1998-11, EN 60204-1:1997, IEC 60204-1:1997, EN 954-1:1996
Operating voltage	AC 230V, AC 115V, AC/DC 24V At AC/DC 24V an insulating transformer acc. to EN 60742 must be used.
Allowable tolerance	+/-10%
Power consumption	approx. 4VA / 2W
Delay time	1 to 30s, continuously adjustable
Control voltage at S11	DC 24V
Control current	approx. 40mA
Safety contacts	3 NO
Auxiliary contacts	1 NC, only usable as a monitoring contact for the basic device
Switching voltage max.	AC 250V
Contact rating of safety contacts (13-14, 23-24, 33-34)	AC: 250V, 1500VA, 6A for AC-12 230V, 4A for AC-15 Cumulating current through all 3 contacts: 10.5A/120V; 6A/250V DC: 24V, 30W, 1,25A for DC-12 24V, 30W, 2A for DC-13
Minimum current	24V/20mA
External fuses for safety cont.	4A slow-blow or 6A quick-blow
Wire width	max. 2,5mm2
Length of control lines	max. 1000m at 0,75mm2
Contact material	AgNi
Service life	mech. approx. 1x107, elec. 1x105 switching cycles
Rated impulse withstand voltage	2,5kV (control voltage/contacts)
Dielectric strength	4kV acc. to DIN VDE 0110-1:1997-04
Protection	IP20
Temperature range	DC 24V: -15°C to +60°C AC 230V/115V: -15°C to +40°C
Weight	approx. 230g
Mounting	DIN-rail acc. to EN 50022-35



Best-Nr	Artikel
472190	SRTC, AC 230V
472191	SRTC, AC 115V
472192	SRTC, AC/DC 24V

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