

SECURITON © Copyright by Securiton	STD 531		T 137 900 E			1 / 2
SecuriStar® Data Sheet Combined smoke and heat detector STD 531	Version	Date	Ind.	Mod. No.	Code	Approved by
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Description

Sector:	FAS
Participant of:	SecuriLine® loop circuit
Purpose:	Scattered light smoke and heat detector (addressable)
Applicability:	CEN-EN 54 and CE
Component of:	SecuriPro® fire alarm system Mounting base USB 501 series

The STD 531 is a combined smoke and heat detector. It detects smouldering fires and open fires at an early stage by being able to detect and evaluate both smoke and heat as fire phenomena. The Tyndall (scattered light) principle is used for smoke detection and the NTC sensor principle for heat detection.

If the signal values specified in the detector are exceeded, the corresponding alarm is transmitted to the control panel.

The STD 531 has a short-circuit isolator capable of isolating a short-circuit on the installation.

The STD 531 can generate the following messages:

- Smoke or heat alarm
- Prealarm 1 at 50%, 2 at 75% of the alarm threshold
- Soiling levels 1 and 2
- Maintenance alarm for smoke or heat
- Fault alarms: Ageing, optical error, supply voltage errors, NTC short-circuit and open circuit, EEPROM errors, component failure
- Excess temperature fault

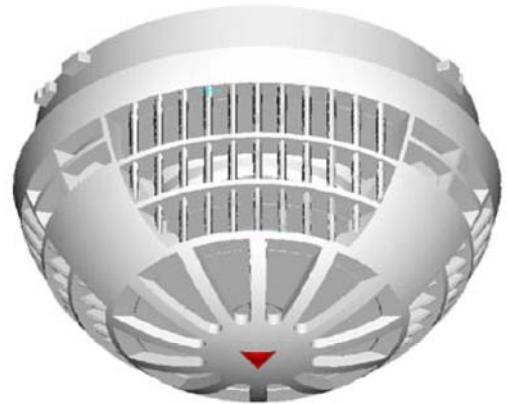


Fig. 1 STD 531

The most important features of the STD 531 are:

- ◆ Digital signal processing.
- ◆ Alarm threshold tracking.
- ◆ Alarm filter for reducing false alarms.

The STD 531 can be programmed and set up in a system-specific manner for its application using the SecuriWin programming. The most applicable settings are:

- Activation / deactivation of the fire phenomena smoke and/or heat.
- Choice of smoke sensitivity; 80% higher, 100% standard, 120% lower sensitivity.
- Choice of heat class according to EN 54/5; Cl. A1, A2, B
- Alarm output for external alarm indication with the possibility of programming several detectors, independently of own alarm LED, at the output.

Technical data

Operating principle	Combined smoke/heat detector (Tyndall effect, NTC sensor)		
Area to be monitored, mounting height	Dependent on active detection principle (smoke or heat detector) ①		
Permissible air speed		max. 20	m/s
Sensitivity of smoke detector according to EN 54-7	20% higher, standard , 20% lower sensitivity		
Sensitivity of heat detector according to EN 54-5	Class A1 , A2, B		
Operating voltage range		15 to 30	VDC
Current consumption in total	normal	typically 500	µA
operating voltage range	at alarm	static; nominally 5, max. 6, pulsed: 20	mA
Signal transmission	Serial data transmission, 2-conductor technology, 4800		baud
Line receiver	SecuriLine® module, SCB 01x		
Alarm output for external indicator lamp	+ 6.8 VDC (± 10%), max 5 mA (short-circuit-proof) ②		
Protection system in combination with base USB 501	IP 44		
Testing by VdS	according to EN 54 Part 7 and 5		
Ambient temperature range (continuous)		-20 - +60	°C
Ambient humidity (briefly, without condensation) at 40°C		95	% r.h.
Ambient humidity (continuous, without condensation) at 40°C		70	% r.h.
Dimensions without base		∅ 118 / height 67.5	mm
Housing colour	Electric white		
Housing material	ABS / PC		
Weight		105	g

① Values dependent on the ceiling construction (height, inclination), according to country-specific planning guidelines.

② **Only** the following external indicator lamps may be connected: RAL 720, RAL 721, RAL 722, MEA 720.

Response behaviour

Substances	Smouldering fire	Open fire	
		with smoke	without smoke
Organic and inorganic	++ S	+ S	++ H
	- H	+ H	- S
	++ STD	++ STD	++ STD

++ very suitable, + suitable, - unsuitable

S = Smoke detector, H = Heat detector, STD = STD 531



Information

Fire detectors may give rise to false alarms due to operational disturbance variables, such as smoke, steam, heat and dust.

Planning



Information

The country-specific guidelines for planning and installation of automatic fire alarm systems are applicable for the planning. For the combined fire detectors (STD 531) additional guidelines may apply if one of the detection properties is switched off permanently or temporarily.

Up to 127 STD 531 are possible per SecurLine®. The number must be calculated. The current consumption, the installation, the other SecurLine® devices and the applicable regulations/guidelines must be taken into account. Also see SecurLine® data sheet.

Mounting / Installation

Mounting and installation of the STD 531 are performed using the USB 501 series mounting base. See USB data sheets

- USB 501-1 Universal base for surface mounting
- USB 501-2 Base for flush mounting in dropped ceilings
- USB 501-3 Base for humid rooms
- USB 501-4 Base for flush mounting in concrete



Information

The information in the data sheets Universal Base USB 501-1 to 501-4, SecurLine® and EMC Compendium are applicable for the installation.

Testing



Information

The STD 531 may be tested only with SECURITON/HEKATRON testers. Testing is possible only in the maintenance mode, and the detector zone must be switched to maintenance for this purpose.

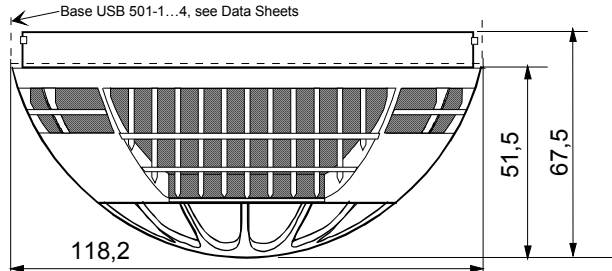


Fig. 2 Dimensioned drawing of STD 531

Connection

The electrical connection is performed to cable plug terminals in the USB 501 base. The electrical connection between detector and base is implemented by means of a 5-pin connector strip.

Terminal	Designation / Signal
1	GND line (in and out)
2	Plus line (in or out) (Data)
3	Plus line (in or out) (Data)
4	GND alarm output
5	Plus alarm output (max. 5 mA)
6	Cross-connection point (screened)

The connections of the USB 501 base are designed so that the SecurLine® is closed on removal of the STD 531 detector.



Danger information

Terminal 5 (alarm output) may be loaded with max. 5 mA.

Maintenance



Information

Germany / Switzerland

Taking into account the particular conditions of the operating environment, the fire detectors should be subjected to a maintenance according to VDE 0833 Part 1 for Germany / VKF Guidelines for Switzerland.

The fire detectors must be subjected to an overhaul at the factory after an operating time of 8 years. Particular conditions of the operating environment may also necessitate an earlier overhaul at the factory.

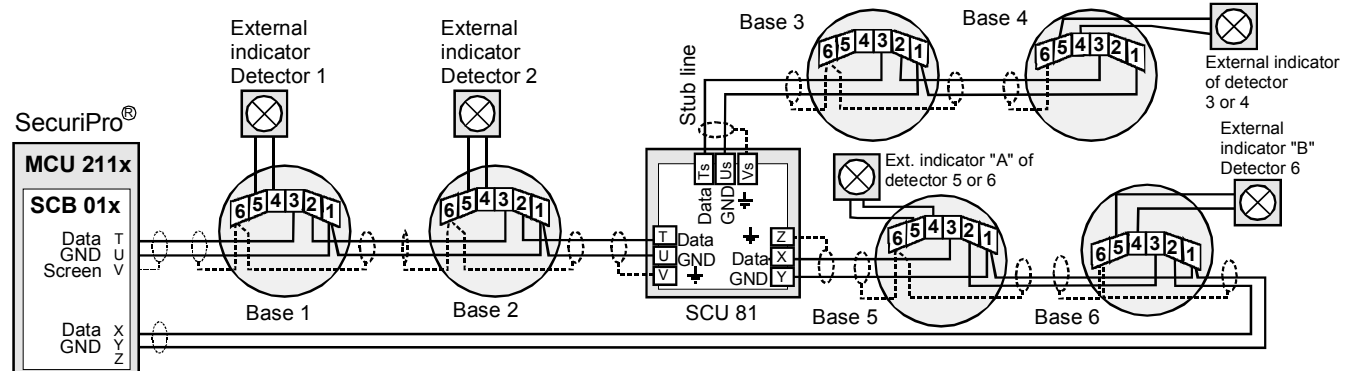


Fig. 3 Wiring example for STD 531 with universal base 501-x

Article numbers and spare parts

Type / Article / Component	Art. No. HEKATRON	Art. No. SECURITON
STD 531	5000571.001	022.221 171
Spare STD 531 (maintenance detector)	95000571.001	022.609 439
Mounting base for STD 531, see data sheets USB 501-1 to USB 501-4		