Product information

Aspirating smoke detectors from Securiton are among the most reliable early warning systems for fires. The SecuriRAS ASD (aspirating smoke detector) range impresses with its unrivalled performance level. Developed in Switzerland and manufactured in Germany, the detectors are particularly reliable and robust.

SecuriRAS ASD 535/532/531

Aspirating smoke detectors (ASD)

Basic design and function of an aspirating smoke detector

An ASD consists of one or two independent sampling tubes with sampling apertures, and with a highly sensitive smoke sensor in each case. Airflow monitoring ensures that the sampling tubes are constantly checked for pipe breakage and the sampling apertures monitored for soiling. A high-performance fan sucks in air from the room or facility being monitored through the sampling tube into the evaluation unit. There the air is continuously evaluated by the smoke sensors. The display and control panel of the evaluation unit indicates the smoke concentration of the sampled air, as well as other alarm, fault and status messages. Any increase in smoke concentration levels is detected very early on. Pre-signals and one or two main alarms can be programmed, and signalled via potential-free relay contacts or directly to the SecuriLine loop.

Overview of range

The SecuriRAS ASD range consists of three types:

- The ASD 535 in 4 versions (1 or 2 channels, with/without smoke level indicator) is the universal device with outstanding performance characteristics for medium-sized and large monitoring areas. Its ambient temperature range reaches as low as –30°C, making it perfect for deep-freeze warehouses.
- The ASD 532 is the single-channel device for medium-sized monitoring areas. It has the same technical specifications as the ASD 535, but with just one sampling tube and a more compact fan. Configuration, programming, maintenance and networking of the system are the same as for the ASD 535 and just as simple.
- The ASD 531 detector is tailor-made for small monitoring areas and for customers who would like a device that is even easier to use but still want an extensive range of accessories.

Highly sensitive smoke sensor

The SSD 53x smoke sensor was specially developed for the SecuriRAS ASD and is the result of comprehensive research. A high-power LED combined with an LVSC (large-volume smoke chamber) sampling chamber results in unparalleled adjustable sensitivity with low aerodynamic resistance and the utmost resistance to soiling. These features ensure long system service life and durability. The patented lint filter helps suppress one-off disturbances.

PC tools for configuration and for calculating the sampling tube

Sampling tubes for all systems can be accurately calculated, optimised and documented with the VdS-tested ASD PipeFlow PC program. This offers the possibility of asymmetrical and therefore cheaper pipe layouts. ASD Config is the tool for commissioning and maintaining the ASD 535 and 532. The «Config over Line» function means this can be used without additional networking, including from the fire alarm control panel (FACP). And RS 485 networking allows an entire ASD array (ASD 535 and 532) to be be visualised and operated at the same time.

Commissioning

The ASD 535 and 532 can also be commissioned with «Easy Config» – so without a PC. With this method, practically the same functions are available as with the ASD Config PC tool. The ASD 531 also uses a simplified process known as «BasiConfig». This allows somebody to commission an ASD 531 with almost no training. All that is needed is the response grade required, and then it is a case of setting the number of sampling apertures and calibrating airflow measurement. Everything else is taken care of by the detector itself.
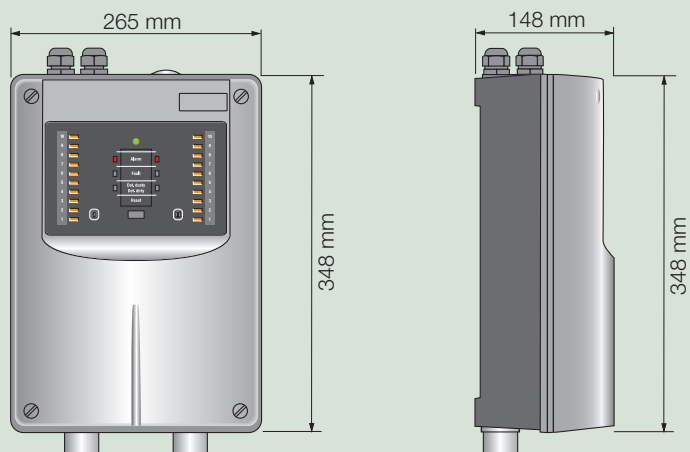
Bi-directional integration and Config over Line

All ASDs can be ideally integrated into the SecuriFire fire detection system with the optional

- Approved according to EN 54-20 classes A, B and C, plus UL and FM
- VdS-tested calculation software ASD PipeFlow allows for an efficient asymmetrical pipe layout
- Sensitivity can be set from 0.002–10 %/m
- Highly sensitive yet robust smoke detection thanks to large-volume smoke chamber (LVSC) with measurement resolution < 0.001%/m
- Complete integration into the SecuriLine loop including Config over Line
- Insensitive to dirt particles thanks to patented particle suppression
- Automatic soiling compensation and autolearning function
- Low noise level, compliant with ISO 11690-1
- Up to 5 alarm levels per detector (3 pre-signals and 1 or 2 alarms)

SecuriLine XLM 35 interface. It is then no problem to display and operate the day/night sensitivity control, for example, from the fire alarm control panel. Thanks to «Config over Line», the ASD 535 and 532 can even be configured from the FACP.

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SecuriRAS ASD 535

265 mm

148 mm

348 mm

348 mm

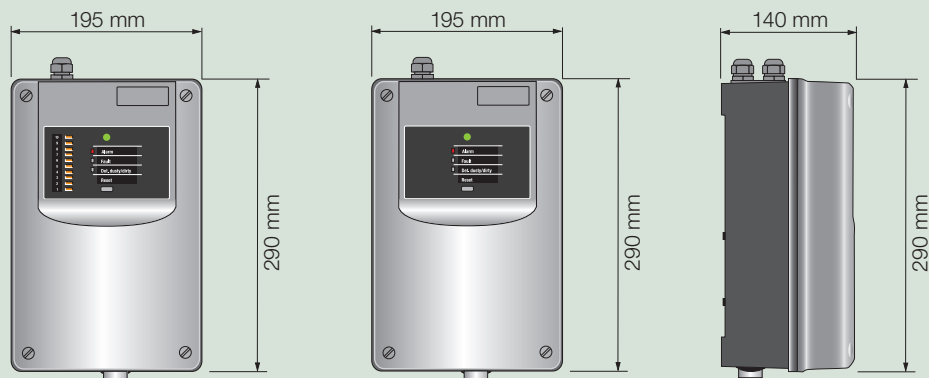| Typical application	ASD 535	ASD 532	ASD 531
Area surveillance			
Warehouses, high-rack storage facilities	●●	●	O
Deep-freeze warehouses, explosion-hazard areas	●●	×	×
Explosion-hazard areas	●●	×	×
Lift shafts	O	●●	●●
Data centres	●●	●●	●
Clean rooms, laboratory and research centres	●●	●●	●●
Dropped ceilings and raised floors	●●	●	●
Cable and energy tunnels	●●	●	●
Transformer rooms	●	●●	O
Archive rooms	●●	●	●
Museums, galleries	●●	●	●
Theatres and cinemas	●●	●	●
Production facilities	●●	●●	O
Recycling plants	●●	●●	O
Rail wagons	●	●●	O
Airports, large halls, underground car parks	●●	●	O
Electronic measurement rooms	●●	●	●
Ventilation ducts	●	●	●●
Invisible applications			
Prisons	●	●●	●
Historical buildings	●●	●	O
Architectural considerations, flush-mounted sampling tubes	●●	●	O
Property surveillance			
EDP racks, telecomms facilities, CNC control systems	●	●●	●●
High- and low-voltage distribution cabinets	●	●●	●●
Display cases	●	●●	●●

Accessory materials		ASD 535	ASD 532	ASD 531
Sampling tubes		Full range in PVC, ABS, stainless steel, copper with d = 25 mm or ¾" (27 mm)		
Filter box	Small, large	●	●	●
	Extra large	●	●	×
Dust trap box		●	●	●
Capillary sampling points	6/4 mm	●	●	×
Flexible tubes/ducts through ceilings		●	●	●
Water separator		●	●	●
Heated sampling fittings	Deep-freeze warehouses	●	×	×
Detonation flame arrester	For expl.-hazard zones	●	×	×
Connecting flange	For ventilation ducts	●	●	●

●● = very suitable, ● = suitable, O = fairly suitable, × = not suitable

ASD 535 aspirating smoke detector range

ASD 535-1/2	Aspirating smoke detector for 1 or 2 SSD 535 smoke sensors without smoke level indicator
ASD 535-3/4	Aspirating smoke detector for 1 or 2 SSD 535 smoke sensors with smoke level indicator
SSD 535-3	Highly sensitive smoke sensor for ASD 535
RIM 35	Optional module with 5 additional relays
MCM 35	Optional SD memory card module connection, with card

SecuriRAS ASD 532/531

195 mm · 290 mm
195 mm · 290 mm
140 mm · 290 mm

ASD 532 aspirating smoke detector range

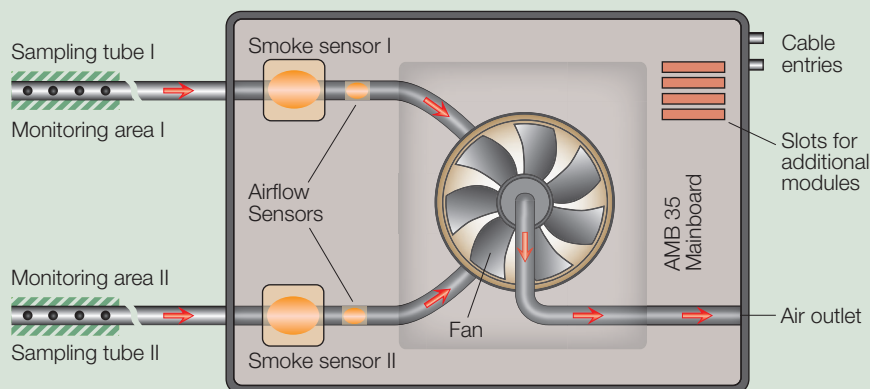|	
ASD 532	Aspirating smoke detector for 1 SSD 532 smoke sensor with smoke level indicator
SSD 532-3	Highly sensitive smoke sensor for ASD 532

ASD 531 aspirating smoke detector range

ASD 531	Aspirating smoke detector including 1 integrated highly sensitive smoke sensor SSD 31, without smoke level indicator

Optional modules range

RIM 36	Optional module with 5 additional relays (ASD 531/532)
SD card	Industrial SD card (ASD 531/532)
XLM 35	Optional module for connection to SecuriLine eXtended
SIM 35/SMM 535	RS 485 networking module/RS 485 master module (ASD 532/535)
UMS 35	Universal module support for mounting line modules
ASD PipeFlow	PC tool for drawing and calculating the sampling pipe
ASD Config	PC tool for commissioning and maintenance (ASD 532/535)

Technical data

Technical data		ASD 535	ASD 532	ASD 531
Supply voltage range	EN 54	10.5–30 VDC	14.0–30 VDC	14.0–30 VDC
	FM/UL	12.4–27 VDC	16.4–27 VDC	16.4–27 VDC
Power consumption	Typical for 24 VDC	260–290 mA	115 mA	75 mA
Sampling tubes/smoke sensors	Quantity	1 or 2	1	1
Alarm sensitivity	Alarm	0.02–10%/m (0.00087–0.457 dB/m)		0.02–10%/m
	Pre-signal	From 0.002%/m (0.0000869 dB/m)		From 0.006%/m
Alarm levels		5 (3 pre-signals, alarm, alarm 2) adjustable pre-signals 10–90%		4 (3 pre-signals fixed in adv. 30/50/70%)
Autolearning, day/night switching		Configurable	Configurable	Not available
Relays	Quantity 1-channel vers.	3 (1 alarm, 1 fault, 1 free)	2 (1 alarm, 1 fault)	2 (1 alarm, 1 fault)
	2-channel vers.	3 (al. I & al. II, 1 fault)	(use RIM 36 for pre-signals)	
	Contact load	50 VDC/1 A (UL 30 VDC)		
Interfaces	O.C. outputs	See relays	See relays	See relays
	PC tool	USB	Ethernet	–
	Network	RS 485	RS 485, Ethernet	–
	Inputs	Reset, day/night	Reset, day/night	Reset
Connection to SecuriFire FACP	Functions	Alarm, alarm 2, pre-signal 1–3, fault, reset		Alarm, pre-signal 1–3, fault, reset
	Optional module XLM 35	Config over Line, analogue values		
Optional modules	Quantity	4	2	2
	Types	2/1 RIM 35, SIM 35, SLM/XLM 35, MCM 35	2/1 RIM 36 (only RIM 36) XLM 35, SIM 35	RIM 36, XLM 35
Standards/approvals	EN 54-20	VdS G 208154	VdS G 215101	VdS G 215100
	EN 54-27 (ventil. ducts)	–	Yes	Yes
	UL 268, FM 3230	Obtained	Planned	Planned
	Other	ActivFire, CCCF, DIBt	–	–
	Compliance	EMC, CPR, RoHS	EMC, CPR, RoHS	EMC, CPR, RoHS
Number of sampling apertures (with ASD PipeFlow)	EN 54-20 Class A	2 × 18	8	6
	EN 54-20 Class B	2 × 56	12	8
	EN 54-20 Class C	2 × 120	16	12
	NFPA 72 (UL/FM)	2 × 120	16	12

Operating principle of an ASD
(example based on ASD 535)

We reserve the rights
to implement technical
changes and modify
delivery options.

Sampling tube I

Monitoring area I

Monitoring area II

Sampling tube II

Smoke sensor I

Airflow
Sensors

Fan

Smoke sensor II

Cable
entries

Slots for
additional
modules

AMB 35 Mainboard

Air outlet

Technical data		ASD 535	ASD 532	ASD 531
Monitoring area	Max. area	5760 m²	1280 m²	720 m²
System limits as per EN 54-20 Class C	Max. quantity Sampling apertures	2 × 120	16	12
	Max. length to last sampling point	2 × 110 m	70 m	40 m
	Max. overall length for all sampling tubes	2 × 300 m	120 m	75 m
System limits without conformity to standards	Max. overall length for all sampling tubes	2 × 400 m	–	–
Configuration	Close operation	EasyConfig	EasyConfig	BasiConfig
	PC tool	ASD Config	ASD Config	–
Calculation of sampling tubes for all three types of aspirating smoke detectors	ASD PipeFlow	• Full support for all product versions • Asymmetrical configurations • Genuine simulation, no table values		
Fan/sampling system	Suction pressure	> 420 Pa	> 180 Pa	> 100 Pa
	Service life (MTTF)	> 65,000 h (at 40 °C)	> 80,000 h (at 40 °C)	> 80,000 h (at 40 °C)
	Performance levels	5	3	1
	Suction noise	< 32 dB (A) (1 m distance)	< 25 dB (A) (fan level 1)	< 25 dB (A) (fan level 1)
	Soundproof housing	< 20 dB (A)	< 20 dB (A)	< 20 dB (A)
Airflow monitoring	As per EN 54-20	1 air flow sensor p/ch. (therm. anemometer)	1 air flow sensor (therm. anemometer)	1 air flow sensor (therm. anemometer)
Housing	EN 60529 prot. category	IP 54	IP 54	IP 54
	Dimensions (W × H × D)	265 × 348 × 148 mm	195 × 290 × 140 mm	195 × 290 × 140 mm
	Cover, grey	RAL 280 70 05	RAL 280 70 05	RAL 280 70 05
	Base, anthracite violet	RAL 300 20 05	RAL 300 20 05	RAL 300 20 05
	Material	ABS blend, UL 94-V0	ABS blend, UL 94-V0	ABS blend, UL 94-V0
	Weight (approx.)	3850 g	1950 g	1950 g
	Cable entries	4 × M20, 1 × M25	3 × M20, 1 × M25	3 × M20, 1 × M25
Packaging	Cardboard (W × H × D)	415 × 285 × 175 mm	355 × 215 × 160 mm	355 × 215 × 160 mm
Operating temperature/humidity	Evaluation unit	–30 – +60°C/95% RH (amb. air max. +40 °C)	–20 – +60°C/95% RH (amb. air max. +40 °C)	–10 – +55°C/95% RH (amb. air max. 40 °C)
Display and operation	Generally, per channel	1 «power» LED green, 1 red «alarm» LED, 1 yellow «fault» LED, 1 yellow soiling LED, 1 reset key		
	Add. 10 LEDs (yellow) for smoke level indicator	ASD 535-3 and -4 (per channel)	Yes	Not available
Event memory/analogue values	On board	430 events	1000 events	1000 events
	With SD card	Up to 1 year (with MCM 35)	Up to 1 year on-board option	Up to 1 year on-board option
Related documents	Data sheet	T 131 193	T 140 422	T 140 417
	Tech. manual	T 131 192	T 140 421	T 140 416
	Sampling guide	T 131 194	T 131 194	T 131 194

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