

## SDAU Aspiration Smoke Detector

**SDAU** is a high sensitivity aspiration smoke detector, certified in respect of European product standard **EN54-20** Class A, B and C. It's endowed with CE mark agreement according to ZA directive enclosure "Construction Products Directive" 89/106/CEE.

**SDAU** is compliant to European directive 2002/95/CE, concerning the use of dangerous substances inside electrical products, in particular about the use of lead.

**SDAU** consists of one or two independent aspiration pipe networks with sampling apertures, each with a highly sensitive smoke sensor. Air flow monitoring (independent control for each network) ensures that the sampling lines are constantly checked for pipe breakage and the sampling holes monitored for pollution. A high-performance aspirator sucks the air from the monitored area through the sampling holes to the evaluating processor unit. There the air is continuously evaluated by the smoke sensors. SDAU is able to indicate the smoke concentration of the sampled air and other alarm, fault and status via LCD and specific LED. Any increase in the smoke concentration is detected very early. Three pre-signals and one main alarm can be programmed for each network and signalled via voltage-free relay. There are four expansion slots for accommodating modular relay interfaces and memory card for events logging.

The **SDAU** is ideal for property and space surveillance thanks to its excellent response behaviour. With autolearning function, SDAU is able to monitor the ambient air over a defined period of time (adjustable from one minute to fourteen days) send the results to the system; based on that, it can then determine the ideal trigger threshold of the smoke sensors. The SSD535 smoke sensor was specially developed for SDAU and is the result of extensive research. Use of a high power LED combined with a large volume smoke chamber result in unparalleled, adjustable sensitivity with low aerodynamic resistance and supreme resistance to pollution and soiling. This ensure a long service life.

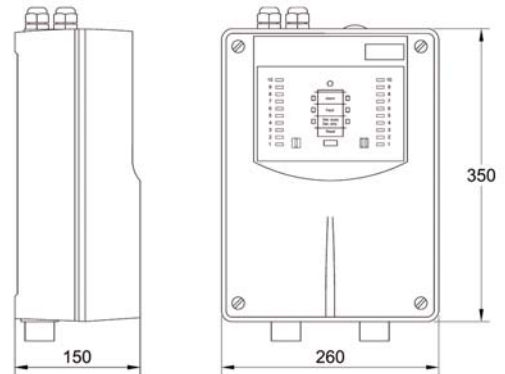
For straightforward installations of standard pipe layouts, 'EasyConfig' procedure offers fast, foolproof, computer-free commissioning.

More complex installations are designed using the 'Sampling Pipe Config' calculation software and configured with 'SDAU Config', the commissioning and maintenance software. This allows for better-value asymmetrical pipe layout.

An extensive range of accessories for the aspiration pipe networks is available (pipes, bends, sampling points, filters, on-pipe smoke detection module, water separator, explosion protection,...)

SDAU is available in following versions:

- SDAU-1** For 1 sampling network without smoke level indicator
- SDAU-2** For 2 sampling networks without smoke level indicators
- SDAU-3** For 1 sampling network with smoke level indicator
- SDAU-4** For 2 sampling networks with smoke level indicators



### TECHNICAL CHARACTERISTICS

Supply voltage	10.5 ÷ 30 Vdc
Operating current, quiescent	290 mA (at 24Vdc)
Alarm sensitivity	0.02 to 10 %/m
Presignals 1, 2 and 3	0.002 to 10 %/m
Output	3 relays (30Vdc / 1A) 3 open collectors (100mA)
Operating temperature	-20°C to +60°C
Protection class	IP54
Housing dimensions	265 x 397 x 146 mm (W x H x D)
Housing material	ABS, UL 94-V0
Housing colour	Light grey RAL 7035
Weight	Approx. 3850 g
Ventilator service life	65,000 hours (at 40°C)
Suction pressure	> 400 Pa (performance level 5)
Standards	EN 54-20, Class A, B and C
Certification	0786 – CPD – 20761 VdS approved
System criteria	Max 2 x 200 m, max 2 x 24 sampling holes

#### DEF International Operations

Parc d'Activités du Moulin de Massy - 9, rue du Saule Trapu BP211 - 91882 Massy Cedex France

Tel: 0033 (0)1 60 13 81 66 - Fax: 0033 (0)1 60 13 81 49 - def.international@def-online.com - [www.def-online.net](http://www.def-online.net)

## SSD535 smoke sensor for SDAU

The SSD535 smoke sensor was specially developed for SDAU.

The air aspirated from the sampling apertures on pipe networks is continuously evaluated by the smoke sensors.

This sensor is able to detect very early any increase in the smoke concentration. In fact it is designed to optimally fulfill the requirements of a smoke detection in conjunction with an aspirating system.

Use of a high power LED combined with a large volume smoke chamber result in unparalleled, adjustable sensitivity with low aerodynamic resistance and dynamic suppression of dust particles.

This ensures a supreme resistance to pollution and a long service life.

SSD535 has a very performing algorithm to compensate the contamination so that track the alarm and pre-signal thresholds with contamination level.

Smoke sensors are able to indicate 2 warning pollution levels: at first "Dusty" and then "Dirty" and the sensor must be replaced.

Following types of smoke sensors can be used with SDAU:

SSD 535-1 alarm sensitivity range 0.5%/m to 10%/m

SSD 535-2 alarm sensitivity range 0.1%/m to 10%/m

SSD 535-3 alarm sensitivity range 0.02%/m to 10%/m

Smoke sensor type selection, with respective range of sensitivity, is function of pipe network architecture, number of aspiration holes and sensitivity class of EN54-20 standard; "Sampling Pipe config" calculation software or "Easy Config" procedure fix the type of smoke sensor to use.

The sensitivity of smoke sensor can be adjusted within the above specified range using "SDAU config" commissioning software.



### TECHNICAL CHARACTERISTICS

Operating voltage:	5 V DC
Protection category:	IP 44
Alarm-sensitivity range:	
SSD 535-1:	0.5 to 10 %/m
SSD 535-2:	0.1 to 10 %/m
SSD 535-3:	0.02 to 10 %/m
Pre-signal sensitivity:	0.002 to 10 %/m
Ambient temperature:	-20 °C to +60 °C
Dimensions (HxWxD):	145 x 120 x 95 mm

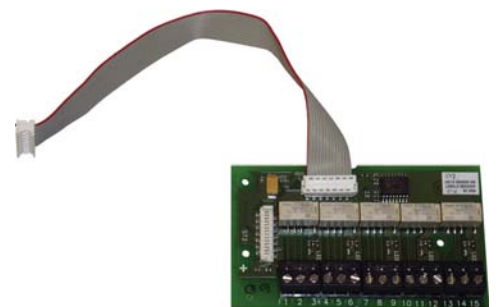
## RIM 35 Relay module

Additional module, to fit in the SDAU, with five potential-free change-over relays contacts.

RIM35 guarantees that the three pre-signal levels as well as the contamination, blockage statuses are reported.

The relays can be freely programmed with "SDAU config" software in accordance with any control criteria.

A maximum of two RIM 35 units can be used in a SDAU.



### TECHNICAL CHARACTERISTICS

Operating voltage:	5 Vdc
Power consumption:	15 mA max
Load capacity relay contact:	50 Vdc / 1 A / 30 W
Dimensions (HxWxD):	58 x 97 x 17 mm

### DEF International Operations

Parc d'Activités du Moulin de Massy - 9, rue du Saule Trapu BP211 - 91882 Massy Cedex France

Tel: 0033 (0)1 60 13 81 66 - Fax: 0033 (0)1 60 13 81 49 - def.international@def-online.com - [www.def-online.net](http://www.def-online.net)

## MCM35 Memory card module

Additional module to fit in the SDAU for recording operating data and events.

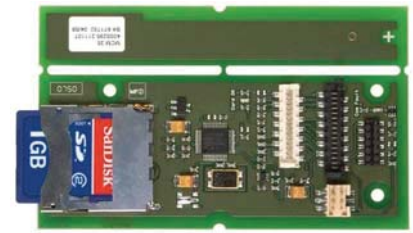
MCM35 is able to records every second and for long period of time, smoke concentrations, air flows and dirt level for each smoke sensor. These data is saved every second on SD memory card.

A maximum of 251 log files each with 28,800 entries can be saved; so it is possible to cover data logging for 83 days. The Log-Files can then be opened in Excel and the data can be processed with the diagram assistant to create charts.

All events which occur in SDAU are written on SD memory card on specific Event-File. A maximum of 251 Event-Files, with 64,000 events each, can be generated for long-term logging. After the last Event-File the oldest one is overwritten.

The Event-Files can be opened with a text editor. There is also the possibility of importing Event-Files using the configuration software "SDAU CONFIG" and displaying them as true event text.

Only SD cards that have been tested and approved for use by the SDAU manufacturer can be used. One SD memory card and a fitting kit are supplied.



### TECHNICAL CHARACTERISTICS

Operating voltage:	5 V DC
Power consumption:	max. 25 mA
Dimensions (HxWxD):	58 x 99 x 17 mm
Data logging timing:	up to 83 days

## SDAU CONFIG commissioning and maintenance software

SDAU CONFIG is PC Software for SDAU maintenance and commissioning.

This SW allow set the SDAU functional parameter according the values achieved with "sampling pipe config" calculation software. Pre-signals, relays repetitions, Day/Night function, Autolearning and air flow monitoring are only a part of possible configuration available.

Moreover, with SDAU CONFIG is possible to recover the memory events and get on the PC the current values of smoke detection, compensation and air flow.

These values are reported in a graph resulting in a simple and immediate overlook about the system behavior.

Connection between PC and SDAU is realized via USB cable



## SAMPLING PIPE CONFIG aspiration pipe networks calculation software

**SAMPLING PIPE CONFIG** is a PC calculation software for planning asymmetrical aspirating pipe networks in accordance with EN54-20 standard.

Its purpose is to verify that aspiration system is conform with the Class A, B and C of EN54-20 standard and to define which are the parameters to set in the SDAU to ensure that.

The "**Sampling Pipe Config**" calculation software provides also a list of necessary material (tube, bend, filter boxes, water separators, etc.), to realize the system.

Type of material stored in the "**Sampling Pipe Config**" calculation software as well as the "**Sampling Pipe Config**" calculation software itself are approved by VdS.



## 2AD on-pipe alarm locator device

On-pipe alarm locator device 2AD must be installed on the pipe aspiration network that at its end is controlled by an SDAU.

2AD analyzes the air flow crossing it using a reflection principle of two different wavelengths (red and infrared light) according to the Tyndall effect. The combination of these two wavelengths permits to better qualify the type of smoke and to have the same sensitivity on open and smoldering fire.

The advantage offered by **2AD** devices on the pipe aspiration network is to better localize the area in which there are presence of smoke. In example if there is a 2AD device on each branch of a pipe aspiration network, SDAU can detect the smoke on the network and the 2AD can indicate which the branch is.

It is suitable to protect closed or with restricted access area or submitted to heavy environmental conditions (high ventilation, humidity, dusty, hot, cold...) in which is not recommended the use of standard detectors.

2AD is an addressable analog device than can be easily integrated in all addressable fire detection system.

It ensure all interactivity performances of the ORION range detectors like possibility to set the sensitivity level between 7 available; Sensitivity level selection is function of early fire alarm information desired and quality of monitored environment.

A self-compensation algorithm ensures a constant sensitivity regardless the pollution level of the detection chamber. Over a specific very high dirt level, the self-compensation is no more possible and, in this case, the detector sends to the panel specific fault information. To prevent this fault signalization and to simplify the maintenance procedure, 2AD sends to the panel preventive information for two different intermediary dirt levels.

2AD is equipped with a short circuit isolator that in case of short-circuit of detection line, the combined action of panel and detector, allows to rapidly isolate the fault; no detectors are lost. This feature, obviously, is possible only on a closed loop.

Moreover it has a red LED to signal its alarm condition and a specific output to connect a remote alarm indicator.

2AD is composed by a detection head (T2AD) and relative connection box (S2AD) that allow the electrical connection to the fire detection line and the inserted on the aspirating network pipe. Head is fixed on the connection box by 4 screws that ensure hermetic closing to avoid air flow losses.



### TECHNICAL CHARACTERISTICS

Power Supply:	10 ÷ 30 Vdc
Standby Consumption:	150 µA w/ closed isolator 350 µA w/ open isolator
Alarm Consumption:	5 mA ± 1mA @ 20Vdc
Sensitivity:	7 thresholds available
Dimensions (Ø x H x L):	105 x 64 x 148 mm
Weight:	130 g
Pipe diameter:	25mm
IP Protection:	IP54
Material:	ABS
Colour:	White RAL 9016
Operating Temp.:	-10 °C ÷ +60 °C
2AD System criteria:	Max 50 m, max 8 sampling holes

#### DEF International Operations

Parc d'Activités du Moulin de Massy - 9, rue du Saule Trapu BP211 - 91882 Massy Cedex France

Tel: 0033 (0)1 60 13 81 66 - Fax: 0033 (0)1 60 13 81 49 - def.international@def-online.com - [www.def-online.net](http://www.def-online.net)