EN 54-20
EN 54-17

2381
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2381-CPR-F4883

0832
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0832-UNKA-CPR-F1811

991n/01

FA100

Aspirating smoke detector

The FA100 device is an aspiration smoke detector produced by Inim composed of two completely independent channels, with the exception of the aspiration fan which remains in common. Each of the two sampling pipes (channels) can be configured independently in class A, B or C and in accordance with the classification supports 8, 18 and 51 holes respectively. The maximum distance of a sample hole from the detector is 100m.

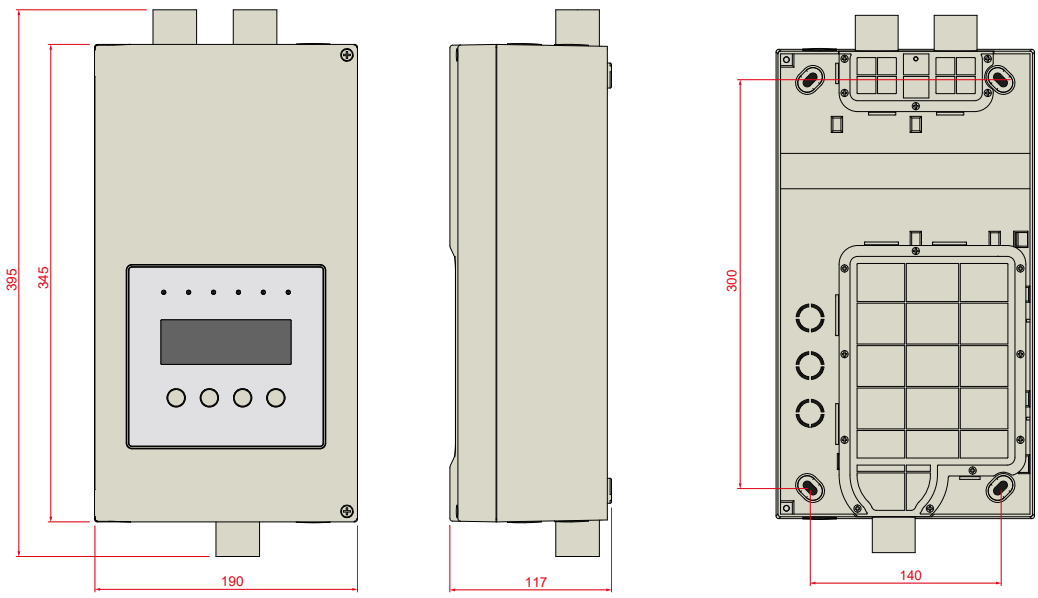
The sampling modules are based on dual light technology that uses two distinct light sources (infrared and blue) capable of evaluating the size of the detected particles and of providing a prompt response in the event of an outbreak of fire whilst offering a high rejection of false alarms caused by dust or mist. Each of the detector modules is capable of measuring the flow rate of the aspirated air and of signalling a fault if this deviates from the value set when activating the system (clogged sampling holes or breaks in the sampling duct).

The detector can be connected to Inim addressable fire control panels by connecting it directly to the loop (the power supply voltage must be supplied separately) thus transferring all the signals and control to the control panel, or it can be connected to any control panel, even conventional, thanks to its relay outputs (6) and its input and output (I/O) terminals (4).

MAIN FEATURES

- Expandable channels: aspirating smoke detection system with one or two channels
- Immediate response to the start of fire and high false alarm rejection
- Configurable in class A, B or C as per EN54-20 standard
- Independent channels with shared suction fan
- Technology of dual light detectors for the identification of the particle dimensions
- Interchangeable internal detectors

DIMENSIONS



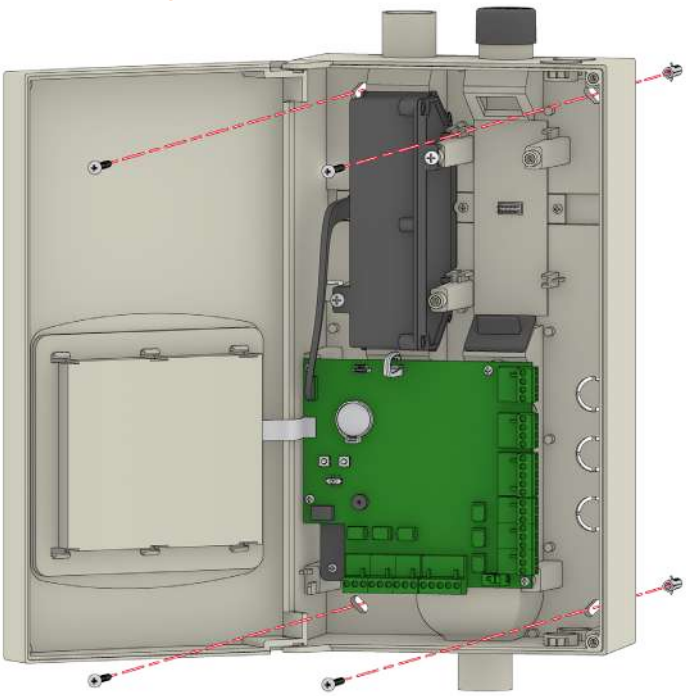
FA100

TECHNICAL SPECIFICATIONS

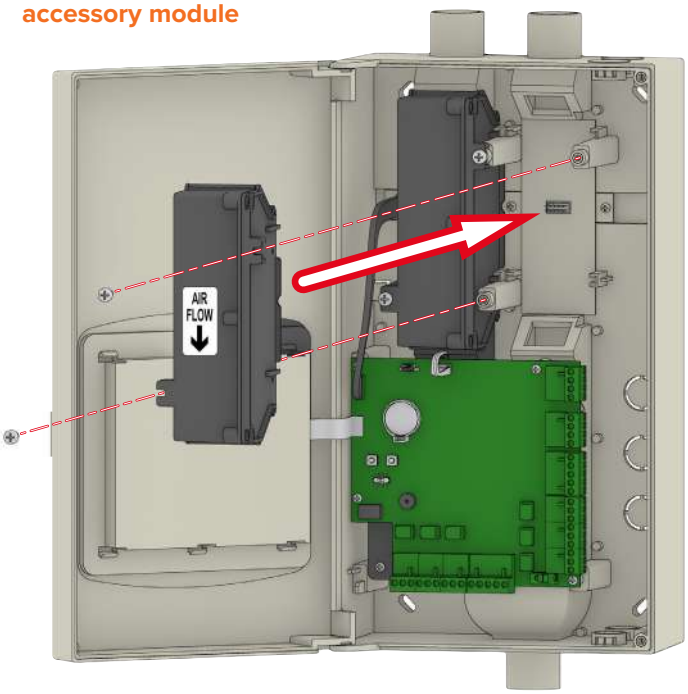
Aspiration pipes		
Number of pipes	2 aspiration pipes 1 exhaust pipe	
Maximum number of sampling holes for each pipe	Class A	8 sampling holes
	Class B	18 sampling holes
	Class C	51 sampling holes
Maximum overall length of the pipes	160 m	
Maximum distance of a sampling hole from the detector	100 m	
Exhaust pipe length	recommended	0.5 m
	maximum	10 m
Primary/Ancillary power-supply	nominal	24 V ⎓
	range	from 20 to 30 V ⎓
	from external power-supply	
Maximum current draw	400mA @ 24 V	
Aspiration fan speed	1500 - 4750 RPM	
Maximum current of the outputs	I/O terminals	15 mA @ 30 V ⎓
	Relay	2 A @ 30 V~, 30 V ⎓
Battery for time/date	CR2032	
Display	Graphic LCD, 192 x 64 pixel, backlit	
Box material	ABS	
Protection grade	IP30	
Dimensions	190 x 395 x 117 mm	
Weight	1.95 Kg	
Operating environmental conditions		
Temperature	from -10°C to +55°C	
Relative humidity	≤ 93%, without condensation	

INSTALLATION

Wall-mounting



Mounting the FAD100 accessory module



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DESIGN

In the design phase of an aspirating smoke detection system, it is first of all necessary to identify the class of sensitivity to be applied according to the type of environment to be protected (see “Detection classes”).

The configuration parameters of the aspirating system, such as the diameter of the sampling holes, the detection sensitivity, the aspirating speed, etc., can be calculated by means of the FA/Studio software or can be determined using the pre-calculated tables attached to the installation and programming manual.

Detection classes

The EN 54-20 standard provides a classification of aspirating smoke detectors based on detection sensitivity.

The class of the detector must be chosen to suit the project requirements and the characteristics of the environments to be monitored.

Class A	Very high sensitivity detection systems that allow the detection of extremely diluted smoke in the air. To be used in very clean environments where prompt detection is essential, such as, for example, “white rooms”.
Class B	Detection systems with advanced sensitivity that allow early detection of smoke. To be used in environments where there are valuable or particularly vulnerable or critical assets such as, for example, electronic devices, server rooms, etc.
Class C	Detection systems with normal sensitivity that allow smoke detection in a similar way to traditional point detectors. To be used in environments that do not present any specific criticalities.

Sampling holes

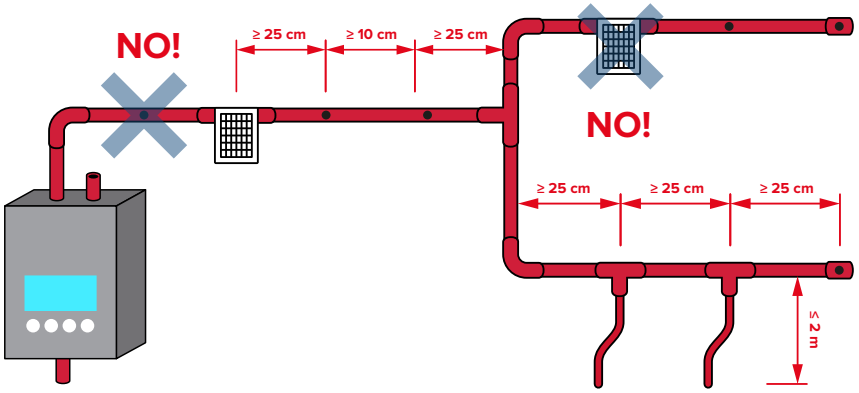
The maximum number of sampling holes that can be drilled in the pipes depends on the sensitivity class chosen.

To define the coverage area of a sampling hole, the maximum number of holes that can be used in an area and their positioning (spacing, height, etc.) reference must be made to the local legislation in force.

System layout limitations

Whatever the design method, the following constraints must in all cases be respected:

- The total length of the aspirating network can be at most 160 m.
  In the case of the device two detector modules are installed, the overall length is given by the sum of the pipes lengths of each detector module.
- The maximum distance of a sample hole from the device is 100m.
- The piping system can have a maximum of 4 sections for each detection module.
- The maximum length of the exhaust pipe is 10m.
  To reduce the noise of the exhaust it is advisable to connect a pipe of a least 50cm.
- The sampling holes must be positioned at least 25cm from the system parts such as:
  - Bends (SABE300250RS)
  - Joint sleeves (SASO100250RS)
  - T-fittings (SATE400250RS)
  - Capillary kit (CAPKIT2510SR)
  - Anti-dust filter (504F075ABS)
  - Condensate trap (WT025)
  - Etc.
- The minimum distance between sampling holes is 10cm.
- The capillary sampling kits (CAPKIT2510SR) must be spaced apart from each other and from the other parts of the system by at least 25cm.
  The maximum length of the capillary pipe is 2m.
- The T-fittings (SATE400250RS) must be spaced apart from each other and from the other parts of the system by at least 25cm.
- Only one dust filter (504F075ABS) and one condensate trap (WT025) can be used for each detector module.
  The maximum distance of these components from the device is 2 m. Sampling holes must not be positioned in the section of the pipe between the device and the dust filter or the condensate trap.



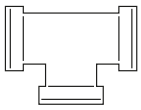
SAMPLING PIPES FOR ASPIRATING SYSTEMS

TUBOABS0250M

25 mm external Ø pipe
3 m bar
25 bars package

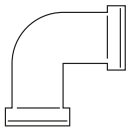
SASO100250RS

Coupling sleeve
external Ø 25 mm
10 pcs package



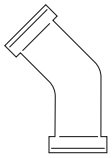
SATE400250RS

T-derivation
external Ø 25 mm
10 pcs package



SABE300250RS

90° bend
external Ø 25 mm (large radius)
10 pcs package

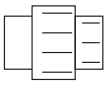


SAEY500250RS

45° Elbow
external Ø 25 mm
10 pcs package

SACA700250RS

Pipe end cap
external Ø 25 mm
10 pcs package



SAUN800250RS

Openable joint sleeve
external Ø 25 mm
10 pcs package

STS25REDK

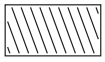
Hose clip
external Ø 25 mm
50 pcs package

SGLUEN0250 / SGLUEN0500

Sealing glue
250 ml or 500 ml package

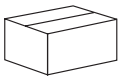
GC025

Telescope add-on with 200mm extension
D. 25mm



17250019050

Flexible spiral pipe
external Ø 25 mm
10 m roll

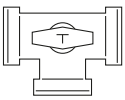


CAPKIT2510SR

Kit for the creation of a sampling capillary comprising:
- "T" branch for pipes with external Ø 25 mm with branch for pipes with external Ø 10 mm
- 1 d.3/8" x 28 - L. 35 mm bulkhead Ø internal 10 mm
- 1 d.3/8"G gasket

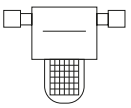
MPE1008025M-R

Red flexible pipe
external Ø 10 mm
for sampling capillaries
25 m roll



2510025

3-way ball valve
pvc/epdm for pipes
external Ø 25 mm



504F075ABS

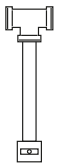
Medium F0.75 filter holder, 3/4" threaded connections, complete with fittings and RL5 cartridge.

AAD12025CRS

3/4" to 25 m Male/Female fitting
Necessary to adapt the 504F075ABS filter to 25 mm external Ø pipes

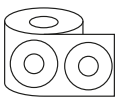
ASO15025CRS

Sleeve for 3/4" pipe fitting with 25 mm external Ø pipes



WT025

Condensate trap for applications in which the sampled environment is particularly cold compared to the environment where the detector is installed.
Includes the "T"-derivation, valve and collection tube.



LABEL23x10

Roll of 200 sampling point labels with written: ASPIRATING POINT

ORDER CODES

FA100	Aspirating smoke detection system
FAD100	Detection module for dual-channel expansion
FA100-WIFI	Wi-Fi interface module
FA100-FILTER	Replacement mesh filter for FAD100 detectors
FA/Studio	Sizing and configuration software for FA100

Evolving Protection

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Inim distributor's stamp and signature