EN 54-20
EN 54-17

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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.

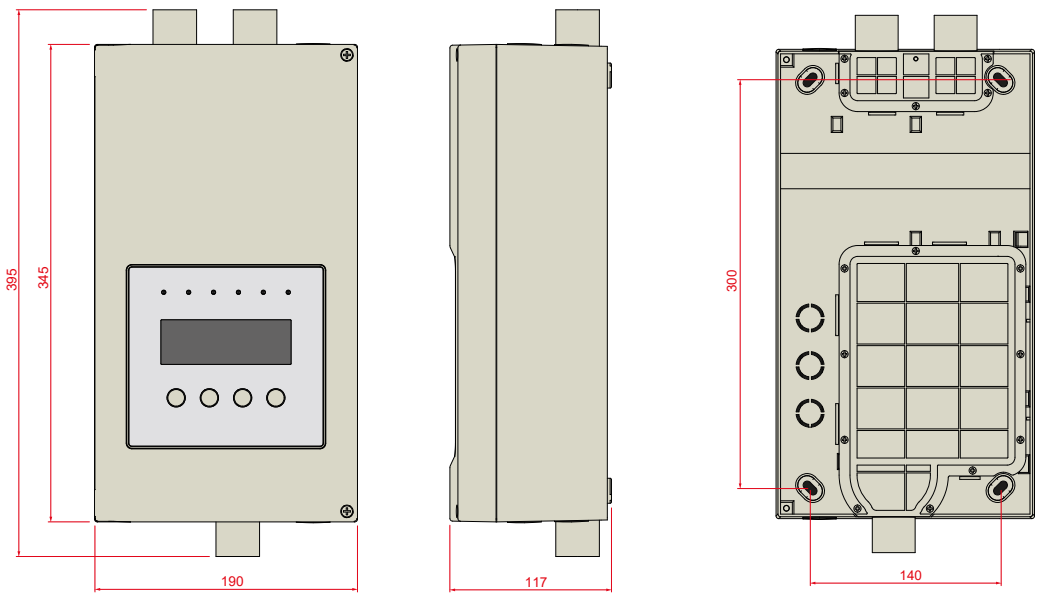
The sampling modules are based on dual light technology that uses two distinct light sources (infrared and blue) capable of evaluating the size of the detected particles and of providing a prompt response in the event of an outbreak of fire whilst offering a high rejection of false alarms caused by dust 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



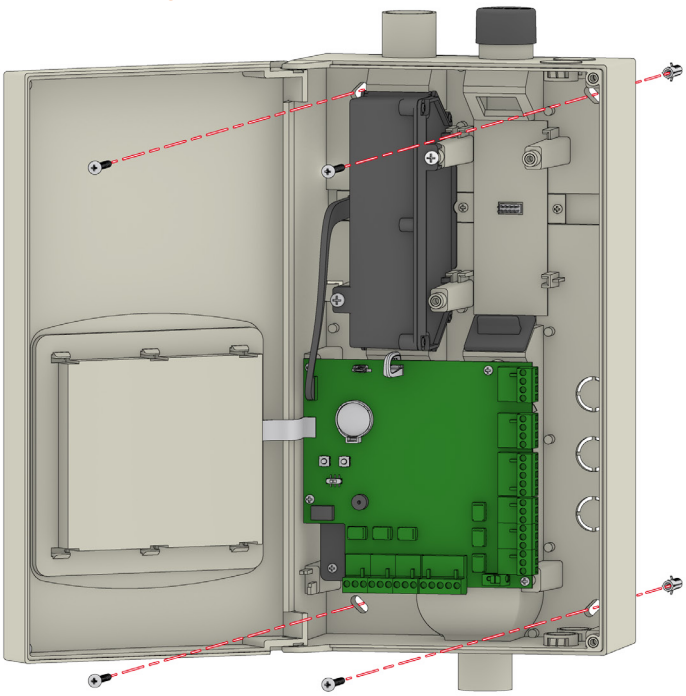
FA100

TECHNICAL SPECIFICATIONS

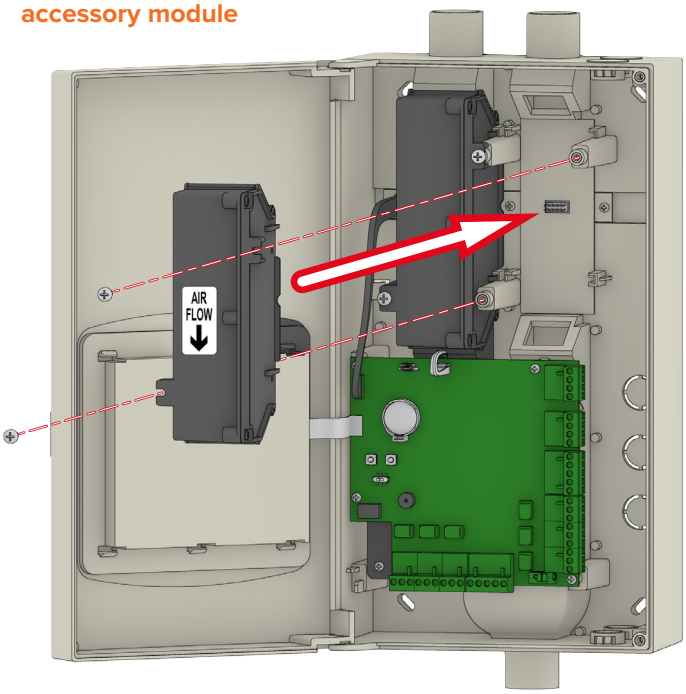
Aspiration pipes		
Number of pipes	2 aspiration pipes 1 exhaust pipe	
Maximum number of sampling holes for each pipe	Class A	8 sampling holes
	Class B	18 sampling holes
	Class C	51 sampling holes
Maximum overall length of the pipes	160 m	
Maximum distance of a sampling hole from the detector	100 m	
Exhaust 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 @ 24V	
Aspiration fan speed	1500 - 4750 RPM	
Maximum current of the outputs	I/O terminals	15mA @ 30V ⎓
	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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PROJECT 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

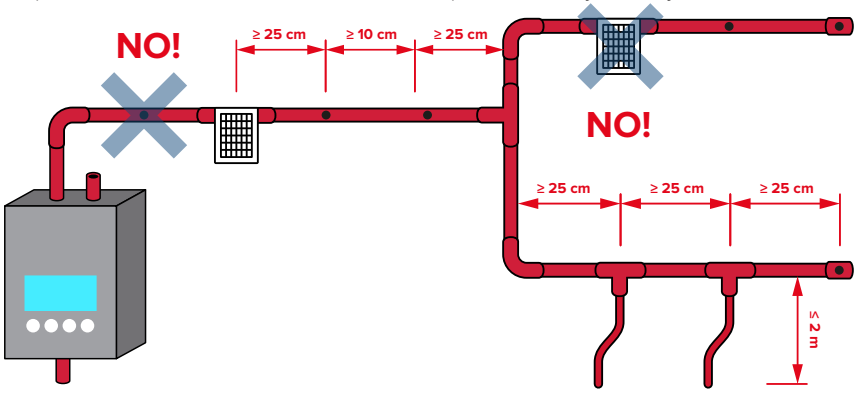
The maximum number of sampling holes that can be drilled in the pipes depends on the sensitivity class chosen.

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 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.



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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

ACCESSORIES

TUBOABS0250M	Air-sampling tube
17250019050	Flexible transparent spiral pipe
2510025	3-way pvc/epdm ball valve for pipes
4084ABS	Cartridge filter for 504F075ABS filter holder, 50 µm filtration
4134ABS	Cartridge filter for 504F075ABS filter holder, 25 µm filtration
4136ABS	Cartridge filter for 504F075ABS filter holder, 10 µm filtration
504F075ABS	Filter holder complete with AAD12025CRS fittings and 4084ABS cartridge.
AAD12025CRS	Male/Female fitting for 504F075ABS filter holder
CAPKIT2510SR	Kit for the creation of a sampling capillary comprising: – 1 gasket – 1 bulkhead – T-fitting
GC025	Telescope joint
LABEL23X10	Sampling hole identification labels with written “ASPIRATING POINT”
MPE1008025M-R	Red flexible pipe for sampling capillaries
MS025	Sliding sleeve
SABE300250RS	90° bend
SACA700250RS	Pipe end cap
SAEY500250RS	45° Elbow
SASO100250RS	Coupling sleeve
SATE400250RS	T-piece
SAUN800250RS	Openable joint sleeve
SGLUEN0250	250 ml sealing glue
STS25REDK	Flexible transparent spiral pipe
TP025C	Test point
WT025	Condensation trap

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Evolving Protection

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