



## PipeSense™ Series Aspirating Smoke Detector

### Specification

#### Features

- Optional SKUs for 1/2/4 pipes
- Independent detection chamber for each pipe
- Default pipe addressing, independent airflow sensor for each pipe
- High sensitivity laser detection technology with a wide sensitivity range
- Extra-long pipe length and abundant sampling holes
- 4-level programmable alarm level for each pipe
- Color LCD with intuitive UI.
- Micro-dust separation technology improves immunity to false alarms and extends the life of filter.
- RS485 interface and 9 relay outputs.
- Event log capacity up to 20,000.
- Modular-based design for easy maintenance and modularized replacement.
- Unique materials and mechanical design for the detection chamber to enhance pollution resistance and water condensation tolerance.
- Inverted installation supported.
- Filter replacement and maintenance reminders.
- HEPA external filter available
- Automatic compensation of sensitivity and airflow.
- GPIO function for remote reset control.

The FW2601 series aspiration smoke detector is a product with multiple unique features. This system offers abundant pipeline configurations, with each pipeline having an independent detection chamber to ensure reliable high-sensitivity detection. The default pipe addressing function and independent PT platinum airflow sensor for each pipe enhance the accuracy of detection and alarm. The advanced laser detection technology features high sensitivity, a wide sensitivity range, and good consistency in its whole lifecycle. The extra-long pipe and abundant holes along the pipe ensure extensive coverage and effective detection of the detector. Pipe addressing and independent four-level alarm for each pipe allow users to promptly identify the location of smoke occurrence and the risk level, enabling them to make optimal response decisions in a timely manner.

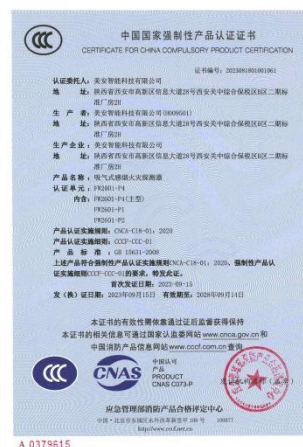
The FW2601 series provides an intuitive and user-friendly color LCD display, enabling efficient operation for both users and technical personnel. It utilizes micro-dust separation technology, which offers improved immunity to false alarms and longer filter lifespan. This series can record up to 20,000 events and offers multiple interfaces such as RS485 and 9 relay outputs, making it easy to integrate and interface with other systems.

The FW2601 series features a quick-detachable and modular structure, making the installation and maintenance process more convenient. The special design of the detection chamber and mechanical parts provides excellent condensation tolerance performance, which will ensure reliable operation of the system in low-temperature and humid environments. The system also features self-learning capabilities for particle and airflow, as well as an NMB high-suction fan to meet the transmission time requirements in conditions of different pipe lengths.

The FW2601 series is an ideal choice for places with high airflow, large open spaces (with ceiling heights exceeding 12m), places with aesthetic requirements, environments with high dust levels that may cause false alarms for spot-type detectors, clean rooms with high airflow, access-restricted areas, and other key locations with high personnel density, valuable assets, or strict requirements for continuous operation.



# CERTIFICATE



## PipeSense CASE STUDY



VNET Data Center, Hebei Province



Cold Chain Smart Logistics Center in ShaoXing City, Zhejiang Province



Xi Ning Airport, Qinghai Province

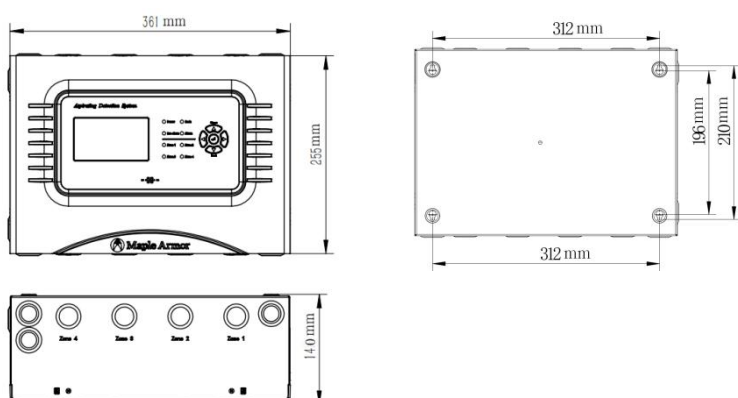


Integrated Transportation Hub and Supporting Projects in Wang Jing West, Beijing

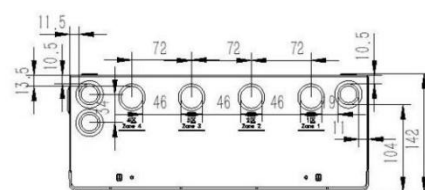
Industry	Project
Airport	Xi Ning Airport Project, Qinghai Province, 121 sets ASD.
Data Center	VNET Data Center, ZhangJiaKou, Hebei Province, 55 sets ASD. VNET Shanghai Data Center
Tunnel	Integrated Transportation Hub and Supporting Projects in Wang Jing West, Beijing, 15 sets ASD. Shuozhoudong Station on the Jining - Datong - Yuanping Railway project, 12 sets ASD.
Industrial Factory	Lingnan Cultural Entrepreneurship Industrial Park, Guangdong Province, 41 sets ASD. Ningbo JadeBird integrated base project for silicon - based anode materials of lithium - ion batteries project, Zhejiang province, 4 sets ASD GoodWe (Guangde) New Energy Industrial Park (Phase I), Anhui Province Tongling 480 million m <sup>2</sup> /year lithium - ion battery project.
Cold Chain Warehouse	Cold Chain Smart Logistics Center in ShaoXing City, Zhejiang Province. 50 sets ASD. Cold Storage warehouse upgrade and reconstruction project of Beijing Huadu Yangguang Food Co., Ltd. 33 sets ASD.

## INSTALLATION

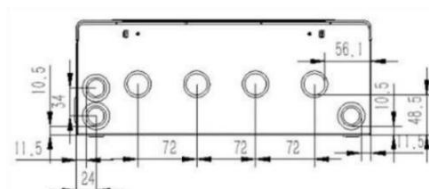
### Physical Dimension



### Spacing and Margins of Holes



Sizes for upper air intakes



Sizes for lower air exhaust

The detector is fixed on the wall using expansion bolts (using M4 screws). The spacing between the mounting holes is 312mm. The sampling pipe\* that is compatible with the detector shall have an outer diameter of 25mm and an inner diameter generally of 21mm. Other external dimensions and detailed installation dimensions are shown in the diagrams.

\*Sampling Pipe and its connecting accessories are usually universal PVC plastic products, which are readily available in the local market. If assistance is needed to procure pipes, please contact your local sales representative at Maple Armor.

## SPECIFICATION

Environmental	
Operating Temperature	0~+38℃
Storage Temperature	-20~+65℃
Relative Humidity	≤95% (no condensation)
Electrical	
Operating Voltage	DC20V~26V
Monitor Current	0.9A, 1.4A, 1.9A (P1, P2, P4)
Alarm Current (maximum)	FW2601-P4: 2.0A; FW2601-P2: 1.5A; FW2601-P1: 1.0A
Indicator	Power supply: green; Fault: yellow; Early warning: red; Fire alarm: red; FW2601-P4: Total of 4 zones: green/red. Green on: monitoring status; Red On: alarm status FW2601-P2: Total of 4 zones: green/red. Green on: monitoring status; Red On: alarm status FW2601-P1: Total of 1 zone: green/red. Green on: monitoring status; Red On: alarm status
Mechanical	
Exterior	Gray PLA9023
Shell material	Metal/Plastic
Weight	FW2601-P4: 5.188kg ; FW2601-P2: 4.198kg ; FW2601-P1: 3.703kg
Dimensions	361×255×140mm
Detection	
Max. protection area	FW2601-P4: 4000m <sup>2</sup> ; FW2601-P2: 2000m <sup>2</sup> ; FW2601-P1: 1000m <sup>2</sup>
Sampling pipe length	P4: 4 pipes, Max. 100m/pipe, FM3230 P2: 2 pipes, Max. 100m/pipe, FM3230 P1: 1 pipe, Max. 100m/pipe, FM3230
Sensitivity range	0.0001~20% obs/m
Relay output	9 configurable relays, capacity 2A
Max sampling holes	FW2601-P4: 80 holes in total; FW2601-P2: 40 holes in total; FW2601-P1: 20 holes in total
Approvals	
FM	Standard FM3230 Smoke Actuated Detectors for Automatic Alarm Signaling
CCC	Standard GB15631-2008 Specialty Fire Detectors

## Spare Parts

### ASD Front panel component



The front panel component of the ASD is the front panel of the PipeSense series products. It includes a display screen, a display driver circuit PCBA, a buzzer, and an operation key panel. Replace this component when the above mentioned parts are damaged. This part varies according to the ASD models with different numbers of pipelines.

- Part Number: **MA-ASY-FW2601-4111-2-1** Front panel component for 1-pipe ASD  
 Part Number: **MA-ASY-FW2601-4111-2-2** Front panel component for 2-pipe ASD  
 Part Number: **MA-ASY-FW2601-4111-2-4** Front panel component for 4-pipe ASD

### ASD Cabinet



The Cabinet of ASD product is the back-shell chassis of the PipeSense series products. Use this component when the chassis is damaged and needs to be replaced. This part varies according to the ASD models with different numbers of pipelines. The main differences lie in the number of openings on the chassis to accommodate the pipelines and their markings.

- Part Number: **MA-ASY-FW2601-4111-5-1** Cabinet for 1-pipe ASD  
 Part Number: **MA-ASY-FW2601-4111-5-2** Cabinet for 2-pipe ASD  
 Part Number: **MA-ASY-FW2601-4111-5-4** Cabinet for 4-pipe ASD

### ASD product master board PCBA



The ASD master board PCBA contains the main chip, all the electronic circuits for function operation, and the connection terminals. Repair or replace this component when the main circuit of the device malfunctions. The 1/2/4 pipe models share the same hardware, but due to software differences, the part number of the component varies depending on the model.

- Part Number: **MA-ASY-FW2601-4111-1-1** master board PCBA for 1-pipe ASD  
 Part Number: **MA-ASY-FW2601-4111-1-2** master board PCBA for 2-pipe ASD  
 Part Number: **MA-ASY-FW2601-4111-1-4** master board PCBA for 2-pipe ASD

### The data cable connecting the main board PCBA and the front panel (Universal)



The data cable connecting the main board PCBA and the front panel (Universal) is a data cable used to connect the ASD master board and the ASD front panel. This data cable is universal for all models. Replace this component when the data cable is damaged.

- Part Number: **MA-ASY-FW2601-4111-6** ASD data cable MB to front panel (universal)

### Laser sensor component (Universal)



The Laser sensor component (Universal) is a detection component of the pipeline detection module, which contains a laser sensor, its driving circuit and the corresponding structure. Replace this component when the sensor malfunctions or is damaged. This component is universal. The maximum number of replacements depends on the number of pipelines in the complete ASD machine.

- Part Number: **MA-ASY-FW2601-4111-4** Laser sensor component (universal)

### Detection chamber structure with fan and air flow sensor (Universal)



The detection chamber contains an air sampling pump and an air flow sensor. This component does not include a laser sensor and the particle filter, although these two are part of this component in the complete machine. Repair or replace when the air sampling pump (fans) malfunctions or is damaged. This component is universal. The maximum number of replacements possible depends on the number of pipelines in the complete ASD machine.

- Part Number: **MA-ASY-FW2601-4111-3** Detection chamber structure with fan and air flow sensor (universal)

### HEPA two-stage particle filter (Universal)



The HEPA filter is to ensure that the ASD remains in optimal working condition. It is a two-stage filter consisting of a coarse filter and a fine filter to ensure that non-fire elements cannot enter the detection chamber. Replace this component as a whole when the ASD prompts to replace the filter cotton. One filter corresponds to one pipeline. The maximum number of possible replacements depends on the number of pipelines in the complete ASD machine.

- Part Number: **MA-ASY-FW2601-4111-7** HEPA two-stage particle filter (universal) , 10-pack



## Accessories

### Straight pipe PVC-U PN16



- Pipe length: 4m (can customize for 2m pack)
- Material: PVC - U, unplasticized polyvinyl chloride, DIN8061
- Color: RAL 7011, dark gray
- Standards: DIN EN ISO 15493, DIN8062

Part Number: **300 160 107**

Straight pipe PVC-U PN16



- A **90 - degree arc elbow** is used when a 90-degree turn is required in the pipeline. This fitting makes a 90 - degree turn with a large arc, significantly reducing the impact of sharp turns on the air flow.
- The **straight-through** PVC-U PN16 is used for the connection of straight pipes, and its inner diameter is equal to the outer diameter of the straight pipes.
- The **Plug PVC-U** is used to block the end of the pipeline. Some-times, holes need to be drilled in the plug, and the diameter of the holes depends on the distance of the plug from the pipeline inlet.
- The **Tee PVC-U** is used to create auxiliary structures such as back-blowing ports near the ASD machine. However, it is not recommended to use the Tee for the branches and turns of sampling holes.
- **Pipe clamps** are used to fix pipelines to walls or ceilings.

1 part number: **721 000 107**

90° arc elbow PVC-U PN16

2 part number: **721 910 107C**

Straight through PVC-U PN16

3 part number: **721 960 107**

Plug PVC-U

4 part number: **721 200 107C**

Tee PVC-U PN16

5 part number: **300 19 0402**

Pipe clamp

### Ball valve PVC-U



The ball valve is installed near the end of the Aspirating Smoke Detector (ASD) on the pipeline. When the system maintenance engineer decides to perform back - blowing cleaning on the pipeline, the ball valve is closed to keep the ASD clean and ensure its normal operation.

Part Number: **161 542 003**

Ball valve PVC-U, connector inner diameter 25mm, 1 pack

### ASD in-line filter



The in - line filter in an aspirating smoke detector is crucial. It protects detector components by keeping out debris that could damage sensitive parts and extends the detector's lifespan. It ensures accurate smoke detection, reducing false alarms caused by non-smoke particles and maintaining the detector's sensitivity. Moreover, it maintains proper airflow by preventing blockages in the air channels, allowing for consistent sampling of air from the protected area.

Part Number: **ZR-D25**

In-line filter, connector inner diameter 25mm, 10 pack

### Capillary sampling tube



The capillary sampling tube is an essential component of an aspirating smoke detector, enabling effective air sampling and smoke detection in a small and confined protected area. Proper installation, connection, and maintenance are key to ensuring its optimal performance.

Part Number: **AR-Sampling pipe**

Capillary sampling hose, Length 45cm, 5 pack

## Accessories

### LT-Sampling Hole



The Sampling Hole Clip simplifies installation and maintenance with a chamfered hole design that reduces dust buildup and a flexi-lip feature for harsh environments, which detaches ice and debris using compressed air. This ensures easier cleaning, improved system reliability, and extended service intervals, making it ideal for challenging applications like freezers and dusty areas.

Part Number: **LT-Sampling Hole**

Sampling Hole Accessory for Low Temperature Applications, 10 pack

### AR-PIPE-R-25



- Pipe length: 4m (can customize for 2m pack)
- Material: PVC -U
- Color: Red
- Standards: DIN EN ISO 15493, DIN8062

Part Number: **AR-PIPE-R-25**

Single length 4 meters/outer diameter 25mm/inner diameter 21mm, Red, 3 Pack

### Detection sampling hole mark label, 100 pc/roll



The sampling hole label of the aspirating smoke detector is used to identify and mark the sampling hole, which helps operators to quickly and accurately understand the relevant information of the detector, and is of great significance for the installation, use, maintenance and management of the detector.

Part Number: **AR-Hole Mark**

Detection sampling hole mark label

### Electric Blower



Versatility: Two tools in one, quickly convert to a vacuum for added versatility  
 Performance: Maximum air volume of 145 cfm for faster clean up in large areas  
 Speed: Delivers a maximum air speed of 203 MPH for faster job site clean up  
 Control: Variable speed control dial and trigger (0~16,000 RPM) for increased performance  
 Include: Nozzle and dust bag

Part Number: **UB1103**

High-power air blowing pump for cleaning pipelines

### In-line Condensing Water Collector



It separates and absorbs condensed liquids like water vapor and oil in the sampled air. This safeguards the internal components of the aspirating smoke detector from potential damage caused by moisture and oil, thus prolonging the detector's service life and ensuring its stable operation. Excessive moisture in the air can interfere with the detector's optical or ionization sensing mechanisms, leading to false alarms. The in-line condensing water collector removes moisture, ensuring the air sample reaching the detector is within the appropriate humidity range and reducing the likelihood of false alarms.

Part Number: **AF4000-06**

Condensing Water Collector

Ordering Info					
Group	MODEL	DESCRIPTION	UOM	MOQ	COO
Detector	FW2601-P1	ASPIRATING SMOKE DETECTOR, SINGLE TUBE, FM	Ea.	1	China
	FW2601-P2	ASPIRATING FIRE DETECTOR, 2 TUBES, 2 ZONES, FM	Ea.	1	China
	FW2601-P4	ASPIRATING FIRE DETECTOR, 4 TUBES, 4 ZONES, FM	Ea.	1	China
Network monitoring	FW2601-P	NETWORKING DISPLAY SOFTWARE	Ea.	1	China
Piping	AR-SAMPLING PIPE	Capillary sampling hose, 5pc/pack	Pack	1	China
Piping-George Fisher	721 960 107	Plug PVC-U national standard PN16, George Fisher brand	Ea.	1	China
	721 910 107C	Straight PVC-U PN16, George Fisher brand	Ea.	1	China
	721 000 107	90 degree curved elbow PVC-U PN16, country of origin Switzerland, George Fisher brand	Ea.	1	Switzerland
	721 200 107C	Tee PVC-U PN16, country of origin China, FM certified accessories, George Fisher brand	Ea.	1	China
	300 160 107	Straight pipe PVC-U PN16, country of origin China, unit meter, FM certified accessories, George Fisher brand	Meter	1	China
	300 19 0402	Pipe clamp, origin China, FM certified accessories, George Fisher brand	Ea.	1	China
Filter(in-line)	ZR-D25	In-line filter, 10 pc/pack	Pack	1	China
Mark labels	AR-HOLE MARK	Neutral sampling hole label, English, 100 pc/roll	Roll	1	China
Cold storage sampling hole	LT-SAMPLING HOLE	Rubber sampling hole clamp, red, 2.5mm sampling hole, for 25mm outer diameter pipe, 5mm hole is required for installation, Red, English package, 10 pc/pack	Pack	1	China
	LT-SAMPLING HOLE-W	Rubber sampling hole clamp, white, 2.5mm sampling hole, for 25mm outer diameter pipe, 5mm hole is required for installation, White, English package, 10 pc/pack	Pack	1	China
Pipe cleansing	UB1103	High-power air pump for cleaning pipeline	Ea.	1	China
	161 542 003	Ball valve PVC-U national standard PN16, FM certified accessories	Ea.	1	China