



SMOKE HATCH SYSTEMS

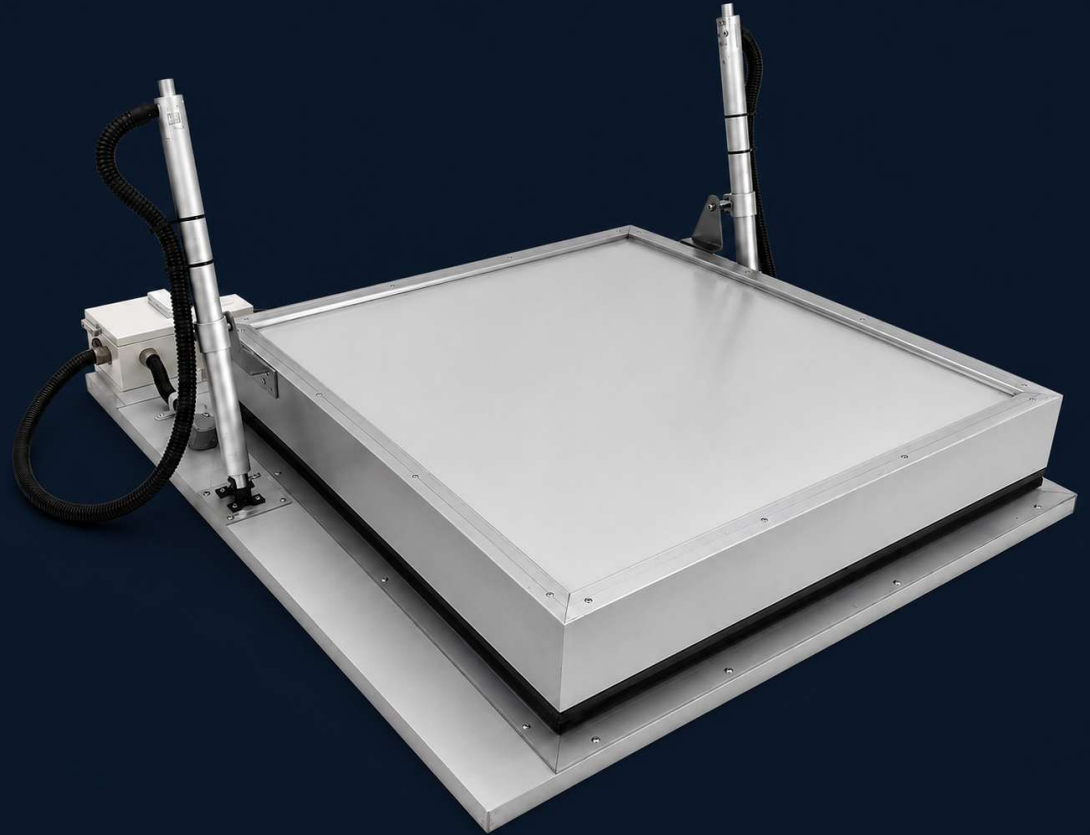
Industrial PIR Panel Ventilation
Solutions

Electric Actuator

Fire Alarm Interface

PIR Insulated Panel

Heater Option



CATALOGUE CONTENTS

APS SMOKE HATCH INDUSTRIAL EDITION

Complete product overview for APS Smoke Hatch Door Systems, including product construction, key features, control system, configuration options, technical data, low-temperature heater option and main application areas.

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BRAND INTRODUCTION



APS supplies insulated panel systems, industrial door products and customized hatch / access products for cold room, warehouse and industrial building applications.

For Smoke Hatch Door Systems, APS focuses on practical, reliable and project-adaptable product solutions to support consultants, contractors and building owners in product selection.

Industrial panel systems

Cold room and warehouse applications

Customized hatch and access products

Product documentation and technical references



APPLICATION FOCUS

Cold storage facilities

ASRS warehouses

Industrial roof applications

Logistics facilities

Project-specific smoke hatch solutions

PRODUCT OVERVIEW



Smoke hatch assembly with insulated panel and linear actuator system.

APS Smoke Hatch Door System is a roof-mounted natural smoke and heat exhaust product. The system combines an insulated hatch panel, electric actuator system and controller interface for emergency opening upon fire alarm or smoke detection signal.

1. PIR Insulated Hatch Panel
2. Steel Mounting Frame
3. Heavy-Duty Hinge System
4. Linear Actuator
5. EPDM Weather Seal
6. APS-B1 Controller
7. Fire Alarm Signal Interface
8. Manual Open / Stop / Close Control
9. Remote Control (Optional)

KEY FEATURES

PIR Insulated Panel

100 / 150 / 200mm PIR panel; λ 0.021–0.023 W/m·K; material range –30°C to +80°C.

Electric Actuator Opening

24VDC linear actuator opening; 90° opening within 25 seconds, subject to final configuration.

Fire Alarm Interface

Dry contact / powered fire signal input with feedback output for fire alarm coordination.

EPDM Weather Seal

Weather sealing around the hatch opening to reduce air leakage, moisture ingress and thermal loss.

Optional Heater Wire

Frame, panel edge and gasket-zone heating options to reduce frosting and sticking risk.

Project Customization

Size, thickness, finish, frame, actuator quantity and control method can be project configured.

APS COMPETITIVE ADVANTAGES

A cold-storage oriented smoke hatch system combining quantified PIR panel performance, project customization and integrated electric control.

100–200mm

PIR insulated panel thickness options

≤25 sec

90° electric opening performance

–30°C

PIR material stable operating range

4/6/8A

APS-B1 controller current options

Cold-Storage Fit

Insulated hatch panel design aligns with cold room, freezer, ASRS and temperature-controlled roof applications.

Project Adaptability

Size, panel thickness, finish, frame material, actuator quantity and control method can be configured.

Anti-Frost Strategy

Optional heater wire can protect frame, panel edge, gasket contact area and bottom critical zone.

Integrated Control

Manual, fire alarm, sensor and optional RF remote operation can be coordinated through APS-B1 control.

Thermal Material Data

PIR density $44 \pm 2 \text{ kg/m}^3$ and λ 0.021–0.023 W/m·K support technical selection.

Serviceable Electric Operation

Open / Stop / Close operation supports commissioning, periodic testing and controlled reset after activation.

— PIR PANEL PERFORMANCE

INSULATED PANEL DATA

APS uses PIR insulated panel construction with quantified thermal and structural data for cold-storage smoke hatch selection.

0.021–0.023

PIR thermal conductivity
W/m·K

44 ± 2

PIR density kg/m³

>90%

Closed cell content



100mm Panel

Weight: 12.82 kg/m²
Nominal core R: 4.35–4.76
m²·K/W

150mm Panel

Weight: 15.10 kg/m²
Nominal core R: 6.52–7.14
m²·K/W

200mm Panel

Weight: 17.55 kg/m²
Nominal core R: 8.70–9.52
m²·K/W

Material Range

Stable operating temperature from –30°C to +80°C;
water absorption <2%; dimensional stability <1%.

Opening Performance

Electric hatch opening to 90° within 25 seconds, subject
to final size, actuator and site condition.

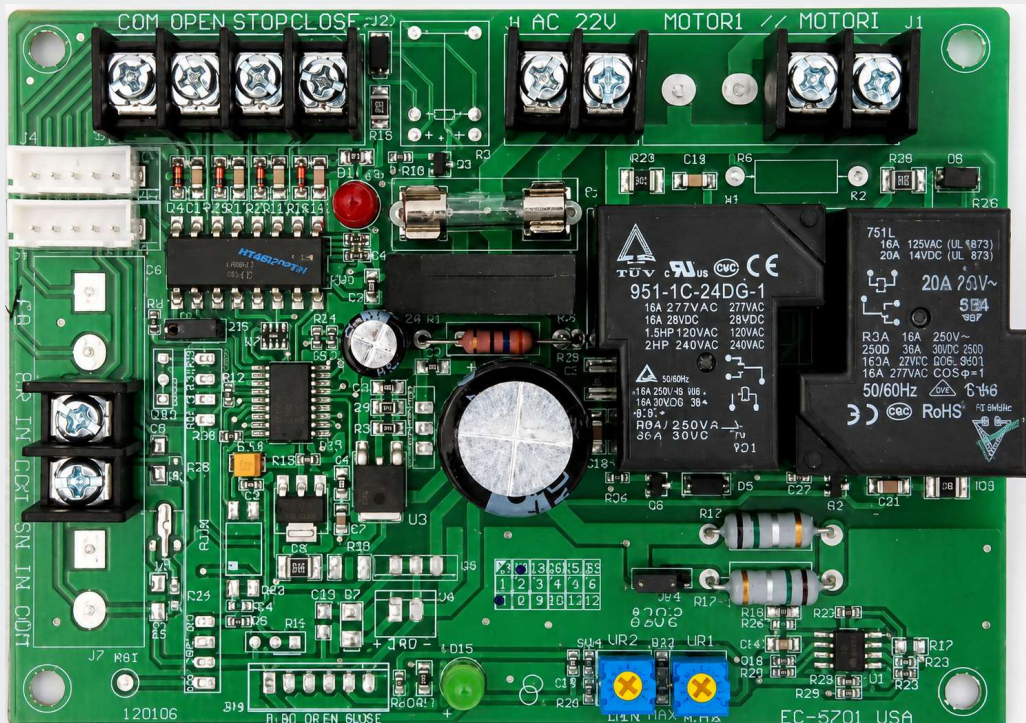
Note: R-values above are calculated for the PIR core only and do not represent the complete hatch U-value including frame, edge and installation interfaces.

SYSTEM OPERATION

During emergency activation, the controller receives a fire alarm or smoke detector signal, activates the actuator system and opens the hatch door to discharge smoke and heat through the roof opening.



APS-B1 CONTROLLER



The APS-B1 controller operates 24VDC linear actuators for smoke hatch opening and supports manual control, fire-alarm input, feedback output, multi-actuator operation and optional RF remote control.

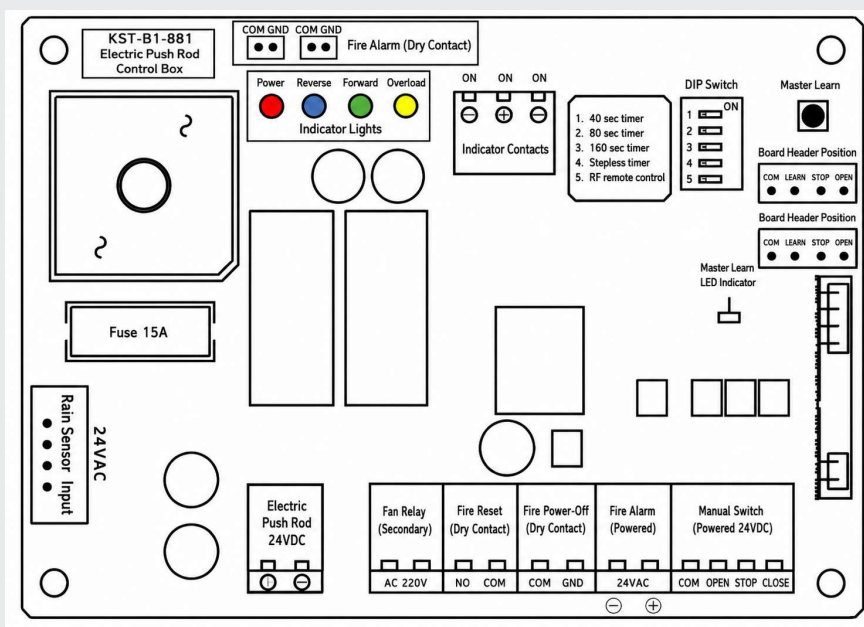
- Open / Stop / Close dry-contact control
- Dry contact or powered 24VAC fire input
- NC / COM feedback output for fire panel interface
- 40 / 80 / 160 sec auto cut-off setting
- Overload and transformer thermal protection
- Optional RF 433 remote control

ITEM	DESCRIPTION
Input Supply	100–120VAC or 220–230VAC transformer input; board input 22/24VAC
Actuator Output	24VDC M+ / M–; APS-B14 / B16 / B18 model options
Control Signal	COM / Open / Stop / Close dry contacts; recommended distance ≤100m
Fire Interface	Dry COM/GND or powered 24VAC input; NC/COM feedback output
Protection	Auto cut-off, overload protection and transformer thermal switch

— CONTROL BOX DETAIL

APS-B1 INTEGRATION & PROTECTION

The APS-B1 control box expands APS smoke hatch operation from simple actuator control to fire interface, multi-actuator control and protection management.



Control Box Enclosure

Powder-coated steel box; approx. 260 × 140 × 100mm with cable knock-outs and wall-mount holes.

Actuator Output

24VDC M+ / M- output for linear actuator operation; 4A, 6A and 8A controller options.

Manual Control

Dry-contact COM / Open / Stop / Close control; recommended switch-to-board distance ≤100m.

Fire Interface

Dry-contact fire input COM / GND or powered 24VAC input; NC / COM feedback output.

Parallel Control

Board parallel ports support coordinated control of same-stroke / same-spec actuators.

Protection

40 / 80 / 160 sec auto cut-off, overload protection and transformer thermal switch at 95±5°C.

Optional Remote

RF 433 remote option with Open / Stop / Close buttons and LED indicator.

Control configuration must be matched to actuator model, hatch load, operating current and project fire-alarm logic.

FLEXIBLE OPTIONS

CONFIGURATION OPTIONS

COMPONENT	OPTIONS
Panel Thickness	100mm / 150mm / 200mm / Custom
Panel Finish	PPGI / Stainless Steel / Custom
Frame Material	GI / Aluminium / Custom
Actuator System	Single / Dual / Multiple
Control Method	Manual / Fire Alarm / Smoke Detector / Remote
Seal Type	EPDM Weather Seal
Heater Wire	Available based on operating temperature



SMOKE HATCH SPECIFICATIONS

Product configuration may be adjusted according to project requirements. Hatch panel, actuator system and heater wire arrangement should be confirmed based on operating temperature, opening requirement and application condition.

FEATURE	SPECIFICATION
Product Type	Smoke Hatch Door System
Application	Natural smoke & heat exhaust
Installation Type	Roof mounted
Hatch Panel	PIR insulated panel; density $44 \pm 2 \text{ kg/m}^3$
Panel Thickness	100mm / 150mm / 200mm / Custom
Opening System	Electric linear actuator; 90° opening within 25 sec*
Controller	APS-B1 24VDC actuator controller; 4A / 6A / 8A options
Fire Alarm Interface	Dry contact / powered 24VAC input; NC/COM feedback output
Seal	EPDM weather seal with optional gasket-zone heating
Heater Wire	Frame / panel edge / gasket / bottom critical areas
Finish	PPGI / Stainless Steel / Customization

PIR λ 0.021–0.023 W/m·K; stable material operating temperature -30°C to $+80^{\circ}\text{C}$. *Opening time is subject to final hatch size, panel thickness, actuator configuration and project conditions.

ACTUATOR COMPONENT

LINEAR ACTUATOR SPECIFICATIONS

Electric linear actuator option for APS smoke hatch opening systems. Final selection should be confirmed against hatch weight, opening angle, stroke, thrust, current and controller capacity.

DC12 / 24 / 48V

Voltage options

50–1000 mm

Stroke range

100–2500 N

Rated thrust

IP56

Protection rating

FEATURE	SPECIFICATION
Limit Switch	Built-in
Mounting Hole Distance	$L = 253 + \text{Stroke (S)}, \pm 2 \text{ mm}$
Outer Tube Diameter	35 mm
Extension Tube Diameter	20 mm
Outer Tube Material	Aluminum alloy
Extension Tube Material	Aluminum alloy; stainless steel optional
Duty Cycle	20% (10% at high speed)
Operating Temperature	-20°C to 70°C
Drive Components	Metal; wear-resistant and stable
Application Range	Industrial, household and medical equipment

Selection note: coordinate actuator stroke, thrust, current and bracket geometry with final hatch size and opening time.

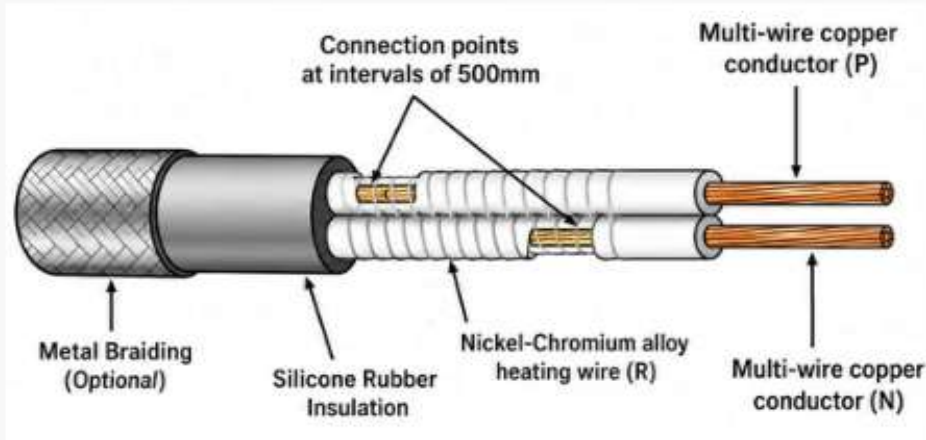


Electric linear actuator with integrated limit switch.

LOW TEMPERATURE OPTION

HEATER SYSTEM

For cold storage, low-temperature rooms or environments with significant temperature difference, heater wire can be configured according to operating temperature requirement to reduce condensation, frosting, gasket freezing and sticking risk.



FEATURE	SPECIFICATION
Frame Heater	For low-temperature applications to reduce frame frosting risk
Panel Edge Heater	Additional anti-frost protection at critical panel edge areas
Gasket Contact Area	Maintains sealing flexibility in low-temperature conditions
Bottom Critical Area	Reduces freezing risk at lower threshold zone
Control Method	Thermostat or independent power arrangement based on project needs

Heater wire arrangement should be confirmed based on operating temperature, humidity and project requirement. For chilled or positive-temperature rooms, heater provision may not be required.

APPLICATION SOLUTIONS

APPLICATION AREAS

Cold Storage Facilities

For temperature-controlled buildings requiring insulated smoke hatch design.

ASRS Warehouses

For high-bay warehouse and automated storage applications.

Industrial Buildings

For factories, production areas and large-span roof applications.

Logistics Facilities

For warehouse and distribution centre smoke ventilation requirements.

Commercial / Utility Buildings

For project-specific smoke ventilation hatch requirements.



DESIGN CONSIDERATIONS

Smoke hatch configuration should be reviewed according to actual project conditions to align opening performance, PIR panel performance, control logic, low-temperature protection and structural interface.

Hatch opening size

Panel thickness

Hatch weight

Opening angle / time verification

Actuator stroke, thrust and current

Frame support condition

Fire alarm input / feedback logic

Weatherproofing detail

Heater wire power and thermostat

Power supply, cable length and backup logic

APS can provide product information and configuration options for project review. Final installation, wiring and authority compliance shall be coordinated by the appointed project parties.



ENGINEERED SMOKE HATCH SOLUTIONS FOR INDUSTRIAL VENTILATION APPLICATIONS

APS Alliance Panel & System supplies PIR panel smoke hatch systems, insulated panels and industrial access solutions for cold room, warehouse and industrial building applications.

CONTACT INFORMATION

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Specifications are subject to final approved drawings, selected actuator and controller configuration, and project-specific operating conditions. PIR panel data, 90° opening time and heater requirements shall be confirmed according to final size, temperature, humidity and actual site conditions.