



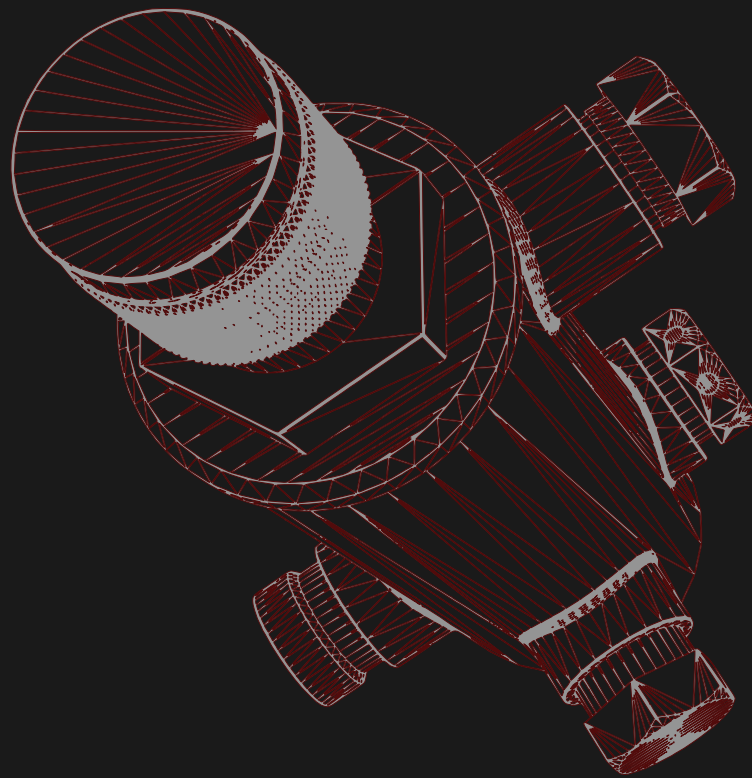
SECONDARY AGENT RELEASE SYSTEM





Fire Sci™

MICRO SUPPRESSION SYSTEMS



Micro-Suppression Systems

Smart Solutions for Safer Tomorrows

In the realm of risk management, every decision counts. FireSci's micro-suppression fire system doesn't just mitigate potential losses; it transforms fire protection into a strategic advantage. Our system's sleek and compact installation design minimizes disruption, making it an ideal solution for businesses seeking to fortify their fire safety measures without undergoing structural modifications. The ease of integration into your existing infrastructure further streamlines the installation process, saving you valuable time and resources.

Secondary Agent Release (SAR) System



PN: 3SARHFC/FK5

PN: 6SARHFC/FK5

PN: 12SARHFC/FK5

PN: 18SARHFC/FK5



Secondary Agent Release System

FIRESCI's SAR System is built to provide comprehensive fire suppression for high-risk enclosures, ensuring fires are detected and extinguished quickly to minimize damage. The system combines state-of-the-art detection methods with an efficient release mechanism, delivering clean agents through stainless steel nozzles placed strategically throughout the protected enclosure. Here's how the SAR system works to keep your equipment and operations safe.

Detection and Actuation Methods

Pressurized Heat Sensing Tube (HST)

The SAR system offers flexible activation methods, allowing it to adapt to diverse environments. One of the most efficient options is Heat-Sensitive Tubing (HST), where a polymer tube is routed throughout the enclosure to act as both a detection and triggering mechanism. When exposed to high heat, the tube ruptures at the fire's source, initiating the suppression sequence. This allows for the clean agent to travel through the piping, and exiting through the nozzles. This method is ideal for environments that require a self-contained and precise detection system.



- Continuous Linear Pneumatic Heat Detection Device
- Humidity and Vibration Resistant
- 150mm Bend Radius
- Exterior Diameter - 6mm
- Interior Diameter - 4mm
- Operating Pressure 195 psi / 13 BAR

UL 521 Temperature Rating

109° C	Intermediate
142° C	High
191° C	Very High

PN: OCI 9901- R6-142
PN: OCI 9901- R6-191

Active Smoke Detection Actuation

Alternatively, the SAR system can be activated using active smoke detectors for early fire warning. These advanced detectors sense smoke particles in the enclosure before flames even develop. Upon detection, the system sends a signal to the solenoid valve, triggering the clean agent's release through the nozzles. This approach ensures the fire is addressed at the earliest stage, reducing potential damage.



Secondary Agent Release System

Detection and Actuation Methods

Active Smoke Detection Actuation

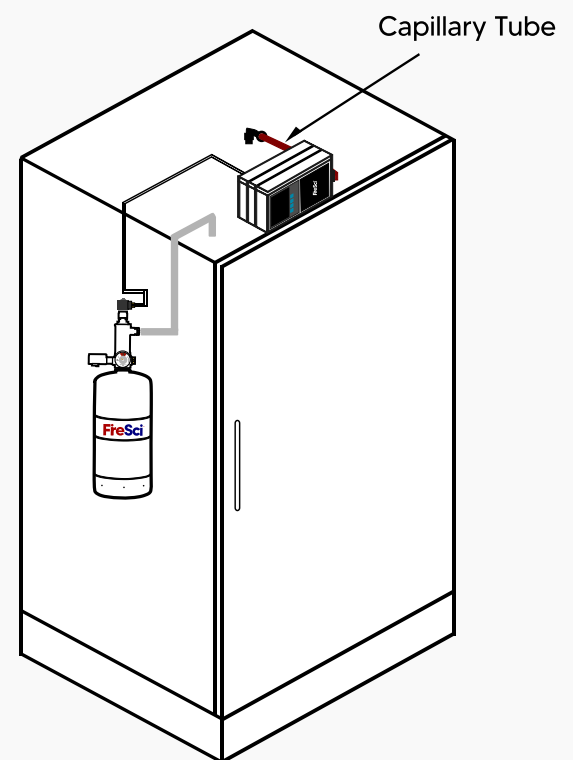
Advanced Smoke Detection Range: The system can detect smoke across a range of 0.02 to 25%/m obscuration, providing exceptionally early detection of potential fires. With its highest sensitivity setting at 0.8% obsc/m, the ACSD-H ensures prompt fire 1-level alerts.

3-in-1 Monitoring: The ACSD-H doesn't just detect smoke; it also monitors carbon monoxide (CO) levels (up to 1000ppm), temperature, and humidity. These multi-level detection capabilities allow the system to identify and respond to a wide range of fire risks before they escalate.

Real-Time Data and Control: Equipped with a front numerical display, the ACSD-H offers real-time data on smoke levels, airflow, and environmental factors. Operators can easily perform critical commands, such as resetting or silencing alarms, via this user-friendly interface.

Multiple Alarm Levels: The system offers four distinct alarm levels—Alert, Action, Fire 1, and Fire 2—ensuring that warnings are issued at appropriate stages of fire risk, enabling faster response times.

Flexible Configuration: With two relay outputs and support for the Modbus RTU open protocol, the ACSD-H integrates smoothly with other fire safety systems, ensuring a seamless and customizable monitoring setup.



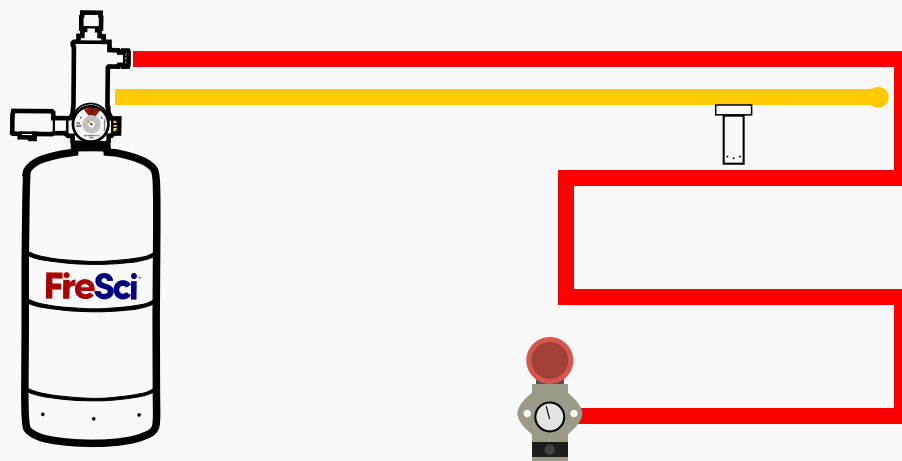
Secondary Agent Release System

Detection and Actuation Methods

Manual Actuation

FIRESCI's Secondary Agent Release (SAR) system includes a manual activation feature, offering an additional layer of control and reliability in fire suppression. This feature is designed as a fail-safe mechanism to complement the automatic actuation methods (heat-sensitive tubing and smoke detection). It ensures that the system can be triggered directly by an operator in situations where immediate human intervention is required or when automatic detection is unavailable or insufficient.

The manual activation feature consists of a manual release station, typically installed near the protected enclosure or in an easily accessible location. The station allows authorized personnel to discharge the clean agent with a push of a button. When the manual release is activated, it bypasses the automatic triggers, directly altering the pressure in the system's upper chamber. This action lifts the valve piston, releasing the clean agent stored in the cylinder. The agent is then routed through the discharge hose and stainless steel nozzles to flood the enclosure and suppress the fire.



Secondary Agent Release System

Stainless Steel Valve Design

Piston Mechanism

The valve incorporates a spring-loaded piston, which acts as the primary barrier keeping the clean agent securely stored inside the cylinder.

Balanced Pressure Design: The piston is subjected to equal pressure from both the upper chamber and the lower chamber (pressurizing the cylinder). This equilibrium ensures the valve remains sealed under normal conditions, preventing premature discharge.

Upon activation, such as when the HST ruptures or a smoke detector triggers the system, the pressure in the upper chamber drops. This imbalance allows the spring to lift the piston, opening the discharge port and releasing the clean agent.

Material and Durability

Its robust design ensures minimal wear and tear, reducing the need for frequent maintenance and prolonging its lifespan. Constructed from stainless steel and high-grade alloys, the valve is designed to withstand high pressures and harsh operating environments.

Safety Features

The cylinder valve is equipped with a burst disc, a critical safety mechanism designed to release excess pressure if it exceeds a predetermined threshold.

This feature ensures that the cylinder remains intact during overpressure events, such as extreme environmental conditions or accidental overcharging.

By preventing potential valve or cylinder rupture, the burst disc provides an additional layer of safety for both personnel and equipment.



Secondary Agent Release System

High Precision Nozzle Design

Material and Build Quality

Made from high-grade stainless steel, the nozzles are resistant to corrosion, extreme temperatures, and environmental wear, making them ideal for use in sensitive or harsh conditions.

Precision Engineering

The flow rate and spray angle are precisely engineered to ensure the agent reaches all areas of the enclosure, leaving no blind spots. The nozzles are specifically designed to control the flow and dispersion of the clean agent. Each nozzle is calibrated to create a fine mist or controlled spray pattern that optimizes the agent's coverage.

Placement Flexibility

Designed for versatility, they can cover irregularly shaped spaces or densely packed areas without requiring excessive clean agent usage. Nozzles can be strategically installed to match the unique layout of the protected enclosure, whether it's a server cabinet, industrial cabinet, or battery storage unit.

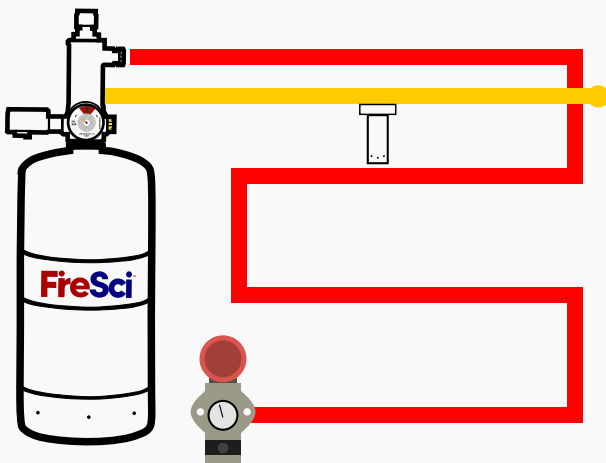
Efficient Suppression

This efficiency reduces the amount of clean agent needed while maintaining maximum suppression effectiveness, making the system both cost-effective and environmentally friendly. The nozzle design minimizes agent loss during discharge, ensuring that the clean agent is delivered directly to the fire's source.



Secondary Agent Release System

System Configurations

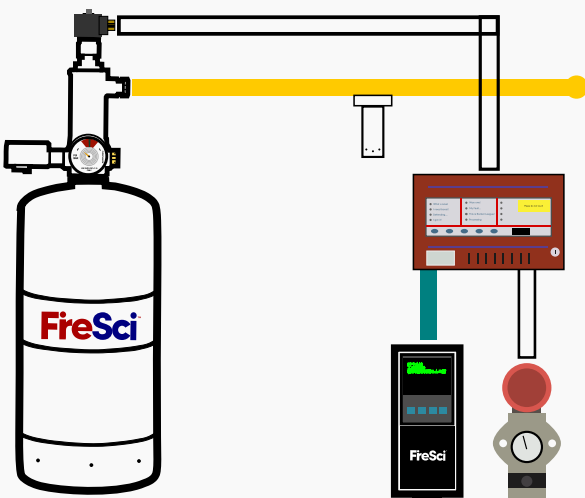


Heat Sensing Tube

- ▮ Localized Detection
- ▮ No External Power Source
- ▮ Simple and Effective
- ▮ Cost Effective
- ▮ Reliable

Manual Activation

- ▮ Human Control
- ▮ Fail-Safe Option
- ▮ Quick Intervention
- ▮ Flexibility
- ▮ Redundant Safety



ACSD-H Smoke Detector

- ▮ Early Warning
- ▮ Adjustable Sensitivity
- ▮ Reliable in Diverse Conditions
- ▮ Integration Friendly
- ▮ Preemptive Protection

Control Panel

- ▮ Streamlined Management
- ▮ Real-Time Status Updates
- ▮ Integration with ACSD-H/Manual Release
- ▮ Integration with Alarm Systems
- ▮ Incident Recording
- ▮ Visual/Audible Alerts
- ▮ Integration with Bi-Metal Heat Detectors



Secondary Agent Release System

Key Features of Our Universal Bracket

Our Universal Bracket in FIRESCI's fire suppression systems is a versatile and sturdy component designed to securely hold cylinders ranging from 3 lbs to 18 lbs in size, including both standard and SMARTILT™ versions. Constructed from stainless steel, this bracket provides exceptional durability and resistance to corrosion, making it suitable for various environments where long-term reliability is essential.

Adjustable Design

The universal bracket is adjustable, accommodating FIRESCI's full range of cylinder sizes (3 lbs, 6 lbs, 12 lbs, and 18 lbs). This flexibility ensures compatibility across different setups and cylinder requirements, enabling efficient protection in diverse applications.

No-Drill Option

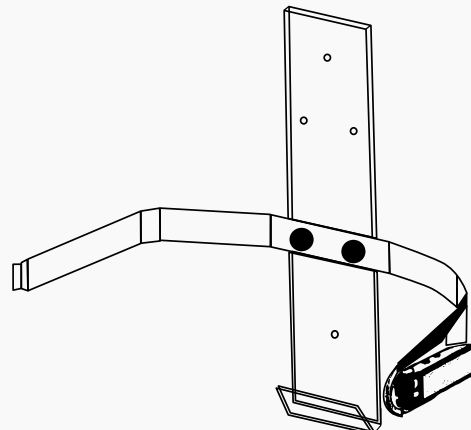
For installations that require non-invasive mounting, the bracket includes a non-drill type option. This version allows for secure cylinder attachment without the need for drilling or altering the mounting surface, preserving the integrity of protected areas.

Enhanced Stability

The robust stainless steel construction provides stable, secure mounting for the cylinder, even in environments with high vibration or movement. This stability is critical for maintaining the integrity of the fire suppression system under various conditions. The robust stainless steel construction provides stable, secure mounting for the cylinder, even in environments with high vibration or movement. This stability is critical for maintaining the integrity of the fire suppression system under various conditions.

PN: OCI-10130-FS

PN: OCI-10131-FS



Secondary Agent Release System

System Applications

Server Rooms and Data Centers

The SAR system is ideal for protecting critical IT infrastructure and sensitive electronics in server rooms and data centers. Using clean agents like Fk5-1-12 or HFC227ea, it ensures fire suppression without leaving any residue or causing harm to hardware. By safeguarding essential equipment such as servers, switches, and storage units, the SAR system minimizes downtime and prevents costly damage.

Control Rooms and Monitoring Stations

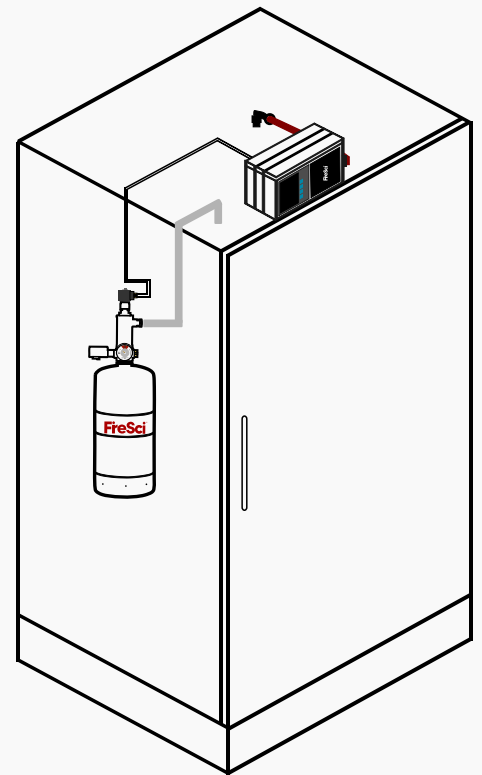
Control rooms and monitoring stations that house sensitive electronics and monitoring equipment benefit greatly from the SAR system. By providing fast and clean suppression, it ensures minimal downtime and uninterrupted operation, even in fire-prone environments.

Generators

The SAR system is ideal for protecting diesel and gas-powered generator enclosures in industrial facilities, manufacturing plants, and power stations. These generators often operate under high heat and with flammable fuels, increasing the risk of fire. The SAR system ensures quick fire suppression without interrupting operations or damaging critical generator components.

Internal Combustion Vehicle Systems

The SAR system can be integrated into enclosures for ICE vehicle systems, such as engine compartments. It provides immediate fire suppression for overheating components, oil leaks, or electrical faults, making it suitable for buses, trucks, and heavy-duty industrial vehicles.



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SMART SOLUTIONS FOR
SAFER TOMORROWS.



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