

APPLICATION GUIDE

ACA-V Multi Criteria Detector with ASB Addressable Sounder Base For Sleep Room Application

Hochiki America Corporation has developed a convenient and unique solution to the difficult issue of sleep room fire alarm coverage in a commercial setting; for example, hotels, motels, dormitories, nursing homes, assisted living, etc. This document is designed to explain how this solution can be used to benefit you and your clients.

A Twofold Challenge -

Historically, sleep rooms have been protected by stand-alone 110 VAC-powered smoke detectors with internal alarm sounders. These detectors were not connected to the building fire alarm system which covered the common areas, corridors and back areas. This code driven operation was designed to prevent evacuating the building during non-emergency conditions; for example, if someone burned toast in their room. An obvious drawback of this approach is the fact that you are dealing with two separate systems; the fire alarm control panel with its notification appliances and the stand-alone smoke detectors in each sleeping room with their built-in alarm sounders. Unless someone is inside of or nearby a sleep room, how will anyone hear the alarm from the stand-alone detector to warn others of the potential danger? On the other hand, when the fire alarm system is activated, how do you ensure that the alarm sound level is loud enough to alert the patrons in their rooms?

Hochiki has developed a simple and cost-effective solution that addresses these challenges.

The Hochiki Solution -

The Hochiki ACA-V is a multi-criteria analog sensor, combining heat and smoke detection into a single device. By using Hochiki's intuitive Loop Explorer software, the ACA-V may be configured to generate a non-latching Supervisory event if the sensor detects smoke and a latching Fire Alarm event if the sensor detects heat. Each ACA-V is connected to the intelligent signaling line circuit of the *FireNET* control panel. The panel provides immediate notification to the people who need to know – security guards, nurse station personnel, hotel front lobby attendants, and so on. Such immediate notification allows for quick investigation and rapid discovery of potential dangers, resulting in a higher level of safety for building occupants. All events in any of the sleep rooms will be indicated, including smoke detection (Supervisory), heat detection (Fire Alarm), or any sort of trouble condition.

Each ACA-V in a sleep room is attached to an Analog Sounder Base (ASB). The ASB is designed to provide local annunciation in the sleep room in the event of smoke or heat. However, because each ASB is a part of the building fire alarm system, it will also be used to indicate general Fire Alarm. For this application, the analog sounder base(s) in a sleep room may be configured to sound in a Continuous or March pattern if smoke is detected in the room, but to sound in a Temporal-3 pattern if a fire alarm condition is present anywhere in the building. This ensures proper notification to all building occupants, including the sleep rooms, in the event of an actual fire emergency.

In situations where a sleep room may have more than one ACA-V sensor and sounder base, the fire alarm panel may be configured so that all of the ASB sounder bases work together in that room to provide notification of local and building-wide emergency conditions.



"The world's finest fire detection systems since 1918."

The Technical Details –

Each ACA-V in a sleep room shall be configured for non-latching Multi-Mode with an Input Action of Supervisory. In this mode, the smoke-sensing element will generate a Supervisory event on the FireNET panel, but the heat-detection element will generate a Fire Alarm. Each ASB Analog Sounder Base shall be configured to activate on General Alarm (Fire) with a Temporal pattern.

To link the analog sounder bases to the Supervisory smoke detector event, you will use Loop Explorer Cause and Effect programming. Simply choose one or more ACA-V sensors as the “cause” and then select one or more analog sounder bases and the Output Type that shall serve as the “effect”.

If an ACA-V sensor detects smoke in a sleep room, the FireNET panel goes into action. The cause and effect logic shall activate the sounder base(s) in that sleep area in a unique, non-Fire Alarm pattern, notifying the room occupants of the alarm. At the same time, the building authorities will be notified by means of the fire alarm control panel display. If the smoke clears, the non-latching event will automatically clear, and the sounder base will be deactivated by the fire alarm control panel.

If an actual fire event is present, heat from the fire will activate the heat sensing element in the ACA-V. This now becomes a Fire Alarm situation, and the control panel will activate all notification appliances, including all of the analog sounder bases, in a fire alarm Temporal pattern. Or, if someone investigates the Supervisory condition generated by the smoke sensor in the sleep room and discovers it to be an actual fire, they may operate a manual pull station, thereby setting the fire alarm control panel into a Fire Alarm state, and operating all of the notification appliances, including all of the ASBs.

The Conclusion -

The challenges of providing fire alarm protection and notification in sleep room applications are simplified by use of Hochiki America's *FireNET* control panel. By using the ACA-V Multi-Criteria sensor along with the ASB Analog Sounder Base, notification may be targeted to critical areas, with full building notification during a fire alarm event. Quick and intuitive programming is made possible by means of Hochiki's Loop Explorer software. And by eliminating the need for a conventional notification appliance in each sleep room, labor and material cost savings are realized. All of this adds up to a reliable and cost-effective solution for you and your customers.

If you have any questions regarding this matter please contact Technical Support.

Technical Support

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