



# Projected Beam Smoke Detector SPB-AN

## Features

The Projected Beam Smoke Detector: SPB consists of an emitter and a receiver which are located separately from each other at a specified distance.

In the event of fire, the generated smoke will decrease the amount of light incident on the receiver.

The receiver will sense such a decrease in light quantity, thereby identifying the occurrence of fire. An important feature of the detector is that it monitors the protected area of space linearly.

This enables the detector to identify a fire before it spreads or expands even where the smoke has dispersed over a wide space.

## Principle of Operation

A near infrared beam (pulse) generated by the emitter enters the photo-diode of the receiver where it is converted into an electrical signal. It then passes through an amplifier circuit and an A-D converter, and the resulting digital signal enters a microcomputer. The initial signal (the initial beam data), once stored in the microcomputer, is used as reference for comparison with subsequent beam signals. If the result of comparison of one beam with the reference shows the occurrence of a fire, then a fire signal is produced. A fault signal is generated if the axis of a beam signal is completely obstructed with a time delay to suppress a fire alarm for up to 30 seconds. The microcomputer functions to compensate for a change of value with time caused by contamination of the optics. Since such a change with time appears as a slow change in beam

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signal, the microcomputer compensates in such a manner that the signal comes close to the reference at a rate of about  $\pm 1\%$  at intervals of about one hour. When this ability to compensate reaches its limit, the microcomputer automatically generates a fault signal.

## Applications

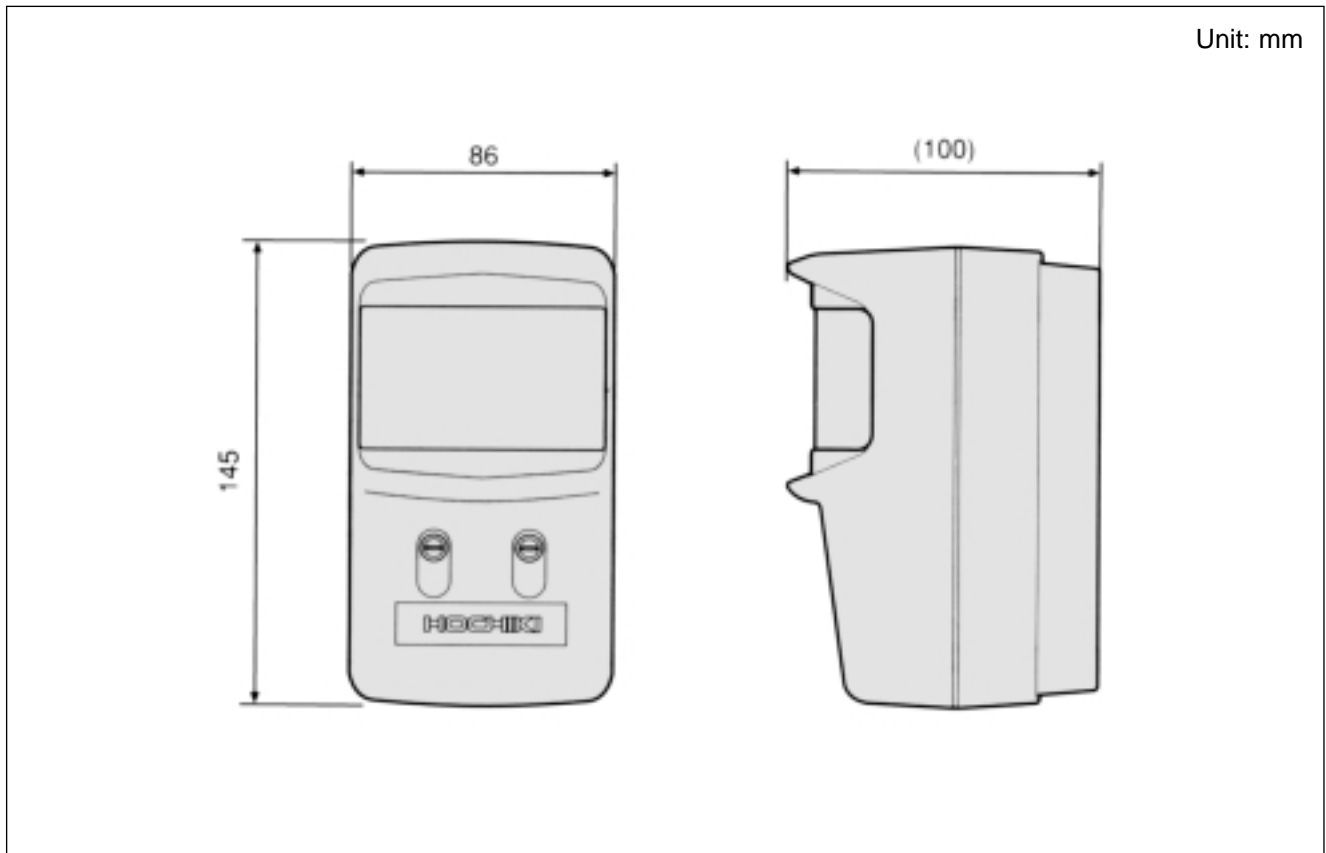
The beam type detector is applicable to buildings with high ceilings, areas of large open spaces or potentially hazardous places. Typical areas of use include:

- gymnasiums, lecture halls, theaters
- workshops, warehouses, vehicle bases
- underground tunnels, caves
- substations, electrical rooms, and chemical warehouses.



## Specifications

	SPB-AN
Rated Voltage	DC 24V
Working Voltage Range	DC 15V ~ 33V, Peak 42V
Current Consumption	250µA at 24V (Average)
Current in Alarm	25mA
Beam Length	5m ~ 100m
Sensitivity Setting	35, 50%/span
Output Signals	Fire Alarm: Normally Open Contact Fault Alarm: Normally Closed Contact
Operating Ambient Temperature Range	-10°C ~ +50°C (14°F ~ +122°F)
Storage Temperature Range	-30°C ~ +70°C (-22°F ~ +158°F)
Allowable Ambient Humidity (at 40°C)	95% RH Non-Condensing
Dimensions	86mm x 100mm x 145mm
Weight	Emitter: Approximately 400g Receiver: Approximately 500g
Colour	Off White
Applicable Standard	FTS-112 (SSL Test Specification)



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