

FCB-350 Beam smoke detector, 24V



This Projected Beam Smoke Detector consists of an emitter and receiver. This detector should be placed so that smoke generated by a fire will likely rise into the path of the beam. The receiver is constantly monitoring and measuring the intensity of the beam transmitted by the emitter. Should the smoke from a fire cause a decrease in the signal strength of a magnitude that exceeds the programmed obscuration setting, an alarm signal is generated.

System overview

This device provides vital fire detection in applications where other types of detectors may not be able to respond quickly, or at all, to a fire condition. Examples of some applications where projected beam smoke detectors have been successfully used include:

- Atriums
- Museums
- Churches
- Gymnasiums
- Factories
- Stables
- Theaters
- Tunnels
- Warehouses

This device may also be used in conjunction with more traditional spot type smoke detection devices to provide an even more comprehensive detection system.



- ▶ Provides 60 feet on center linear protection at a range of 32.8 ft to 328 ft
- ▶ Easy setup and alignment with signal strength LEDs
- ▶ Automatic compensation for signal drift or dirty lens
- ▶ Emitter and receiver are labeled and color-coded red and green for easy recognition

Functions

The Near Infrared pulsed beam generated by the emitter is sensed by the photodiode of the receiver, where it is converted into an electrical signal. This signal is then amplified and applied, through an analog to digital converter, to a microprocessor. The normal state signal (the initial beam data), once stored in the microprocessor, is used as reference for comparison with subsequent beam signals.

When there is a difference between actual beam strength and stored reference data that exceeds the programmed alarm obscuration reference level, an alarm signal is produced. A trouble signal is generated if the beam is more than 90% obstructed (as opposed to partially obscured by smoke) for more than 9 seconds and automatically resets to normal when the blockage is removed.

The microprocessor also provides compensation for a change in received signal value, with time, caused by contamination of the optics. Since such a change with time appears as a slow change in the beam signal, the microprocessor compensates in such a manner that the signal moves closer to the reference data at a rate approximately +1% per hour. When this compensating capability reaches a limit (light received has changed by more than 50%), the device automatically generates a trouble signal.

A calibrated test filter is available upon request to test and verify the sensitivity setting of the device.

Regulatory information

Region	Agency	Certification
US	UL	UL 268: Smoke Detector for Fire Alarm Systems
	CSFM	California State Fire Marshall (see our website)

Parts included

Quantity	Component
1	Detector
1	Hardware pack
1	Installation guide

Technical specifications

Mechanical

Dimensions (H x W x D) (cm)	13.97 cm x 8.12 cm x 10.16 cm
Dimensions (H x W x D) (in)	5.50 in x 3.20 in x 4 in
Spacing (distance between systems)	Up to 60 ft
Material	Plastic (ABS)
Color	Ivory
Transmission range	32 ft - 328 ft
Allowable misalignment angle (Max)	Emitter +/-0.5° Receiver +/-1.0°
Mounting	Wall mount or Single gang box

Environmental

Operating temperature (°C)	-10 °C – 50 °C
Operating temperature (°F)	14 °F – 122 °F
UL installation temperature range	32° F -100° F
Operating relative humidity, non-condensing (%)	95%

Electrical

Operating voltage (VDC)	24 VDC
Standby current	Emitter: 50µA @ 24VDC Receiver: 200µA @ 24VD
Alarm current (receiver)	20mA @ 24DC
Trouble current (receiver)	20mA @ 24VDC

Ordering information

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Provides vital fire detection in applications where other types of detectors may not be able to respond quickly, or at all, to a fire condition.

Order number **FCB-350 | F.01U.397.741**

Accessories

FME-350 Beam smoke test filters

This device is used for testing the calibration of the FCH and FCB 350 series beam smoke detectors.

Order number **FME-350 | F.01U.397.742**

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