

PHOTOELECTRIC BEAM SMOKE DETECTORS



The SPC-ET and SRA-ET are both photoelectric beam smoke detectors that employ the obscuration detection method to detect the presence of smoke.

Principally, this involves measuring the amount of obscuration caused by smoke particles to a pulsed near infra-red beam of light.

SPC-ET

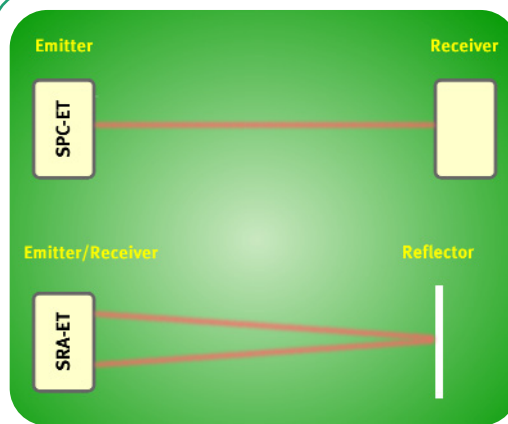
- ▶ 5 - 100m range, resulting in 1500m² coverage (max)
- ▶ Powered directly from the zone, from the loop* or with an auxiliary power supply
- ▶ Full line continuity options
- ▶ Automatic re-calibration adjusts for contamination and changes in atmospheric conditions
- ▶ Approved to BS5839 Part 5
- ▶ Direct wall mounting reduces the effect of vibration associated with brackets

**via CHQ-SZM or CHQ-DZM Module*



SRA-ET

- ▶ 5 - 30m range, resulting in 450m² coverage (max)
- ▶ Small flat reflector, easy to install, simple to commission
- ▶ Powered directly from the zone with very low stand-by current consumption
- ▶ Full line continuity options
- ▶ Automatic re-calibration
- ▶ Direct wall mounting reduces the effect of vibration associated with brackets
- ▶ Approved to BS5839 Part 5 and EN54 part 12

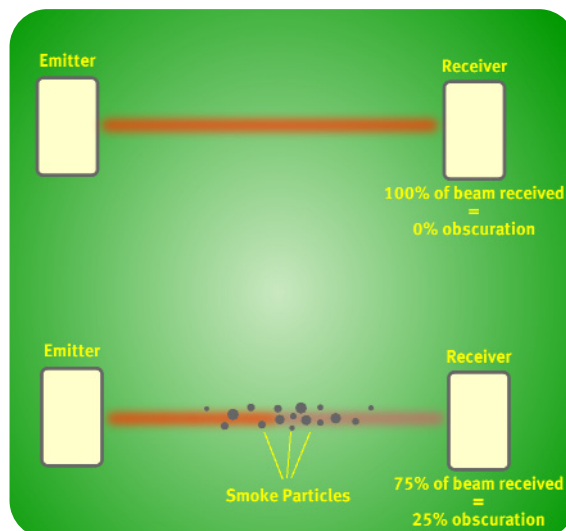


The SPC-ET employs a separate Emitter and Receiver unit. The beam from the emitter can cover a maximum range of 100m.

The SRA-ET however consists of one unit that emits and then receives the beam once it has been reflected back from a reflector plate. The maximum range is 30m between the detector and the reflector.

Both models detect the amount of obscuration of a pulsed beam of near infra-red.

Within a clear, smoke-free atmosphere 100% of the beam is received by the Receiver. This is known as 0% obscuration, in other words all of the beam is getting through to the Receiver.



However, when smoke is present in the atmosphere the particles of carbon and other pollutants within the smoke interrupt the beam so that only a percentage reaches the Receiver. It is this increase in obscuration (or decrease of the beam signal) that is measured by the beam smoke detectors. The sensitivity of the detector can be set to 25%, 50% or 60%. This relates to the percentage of

obscuration NOT the percentage of smoke present. For example setting the detector to 25% sensitivity means that when 25% of the beam signal has been obscured by smoke, the detector will enter a fire condition.

SPC-ET

The emitter of the SPC-ET projects a near Infra-red beam which is detected by the receiver. The beam is pulsed to reduce the overall current consumption and give enhanced noise rejection characteristics. The emitter and receiver are synchronised via a direct 2 wire, fully monitored fail-safe link which also supplies power to the emitter. All other field wiring is connected to the interface on the receiver. If smoke obscures the beam which exceeds the set sensitivity the receiver detects this and indicates a fire by switching a 470 Ohm resistor across the zone. Any gradual reduction in received light is automatically compensated for within the detector. Sensitivity can be adjusted by utilising a set of DIL switches inside the unit, allowing 25%, 50% or 60% sensitivity to be selected.



When used on a conventional system the emitter and receiver can be powered directly from the zone or if required the emitter also has an option to be powered from a separate 24Vd.c. supply. The SPC-ET can also be interfaced to Hochiki's ESP system, the receiver can be connected to a CHQ-SZM Single Zone Module or a CHQ-DZM Dual Zone Module, and the emitter can then be powered directly from the loop or via a separate 24Vd.c. supply. The unit also comes complete with a termination module which fits directly on to a standard U.K. dual back box, this allows the detector be surface or flush mounted. Line continuity options can be selected on the termination module and these are based on the schottky or zener diode method.

Application

The Hochiki Beam Smoke Detector is designed for detection of smoke in large spaces such as halls, warehouses, museums, theatres etc., where conventional point detection is impractical or more costly. The unit detects smoke linearly over the protected range which is 1500 square metres, enabling early detection before the fire spreads. The compact design, good looks and flush mounting installation allows the unit to be fitted in areas where architectural considerations are important.

SRA-ET

Hochiki's Reflective Beam Smoke Detector projects a near Infra-red beam which is reflected back to the receiver circuit within the Detector. The infra-red beam is pulsed to reduce overall current consumption and enhance noise rejection characteristics. Powered directly from the conventional zone without the need for an external supply, when the zone is reset, the Detector is automatically reset.



All field wiring is connected to the interface on the Reflective Beam Smoke Detector. If sufficient smoke obscures the beam which exceeds the 30% sensitivity threshold, the amount of reflected light is reduced and the Detector indicates a fire by switching a 470 Ohm resistor across the zone. Any gradual reduction in received light is automatically compensated for within the detector.

Application

The Hochiki Reflective Beam Smoke Detector is designed for smoke detection in large spaces such as halls and warehouses etc, where conventional point detection is impractical or more costly. The unit is not suitable for applications where strong or reflected sunlight is present, in these instances the SPB-ET should be considered. The unit detects smoke linearly over the protected range, upto a maximum of 450 square metres, enabling early detection before the fire spreads. Compact design, good looks and flush mounting installation makes this unit ideal for fitting in areas where architectural considerations are important.

ESP Compatibility

Both the SPC-ET and the SRA-ET can easily be connected to Hochiki ESP analogue fire detection systems by use of the CHQ-SZM & CHQ-DZM modules. These units enable the detectors to be loop powered and reset from the loop when the user operates reset from the control panel. Also a fault will be indicated at the control panel if the detector is removed from the termination module. The SPC-ET and SRA-ET have been approved by the LPCB. The SRA-ET is also approved by VdS.

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