

MODEL 221 SPARK DETECTOR

The 122 Infrared Spark Detector is a high speed, ultra sensitive optical radiant energy sensor designed to detect small sparks or particles of burning or smoldering material being transported in pneumatic ducts. They are designed for installations in classified areas and are suitable for where the temperature in the duct can exceed 60 °C, and may go as high as 260 °C. Different lengths of fiber optic probes are available – both with two probes or three probes.

Spark Detectors are distinguished by three performance features:

- Spark Detectors are extremely sensitive to very small quantities of radiant energy.
- Their response is faster than any other type of detector.
- They are optimized for the near infrared part of the spectrum.



FEATURES

- Response less than 1 millisecond
- Sensitivity less than 100 nano watts
- Broad Spectral Response
- Class I, II, III cabinet
- Wide field of view (70° per probe)
- Easy mounting
- Smooth surface to help self clean
- Two or three probe versions

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PRINCIPLE OF OPERATION

The 122 Infrared Spark Detectors are sensitive to radiation in the wavelength from 0.4 microns to 1.1 microns. It is most sensitive in the near infrared band centered on 1.0 micron. When a spark or glowing ember enters the field of view of the detector, the detector responds by sending an alarm signal to the control equipment. Most applications require two 122-2 detectors with a total of 4 fiber optic probes. The probes are mounted 90 degrees apart with the probes of one detector mounted at 1:30 and 4:30 o'clock and the probes of the other detector mounted at 7:30 and 10:30 o'clock. When one 122-3 detector is employed, the probes are generally mounted 120 degrees apart with the probes mounted at 12:00, 4:00 and 8:00 o'clock. More than one detector may be required for larger ducts. Sensitivity testing is not available for the 122 detectors.

DETECTOR INSTALLATION

The detectors provide a smooth surface when mounted on the pneumatic ducts. The smooth surface of the detector on the inside of the duct promotes self cleaning of the lens to help reduce maintenance requirements. This prevents the build up of dust on and around the lens and eliminates the problem of foreign objects such as dust masks from catching on mounting screws.



Flanges and mounting hardware are provided with the detectors. The flush mount flange can be mounted from the inside of the duct or mounted through a blind hole from the outside of the duct with the use of a special tool. Detectors are easily removed from the ducts for inspection or cleaning. And the removable, waterproof connector makes servicing and installation a breeze.