

MODEL 246-1 EMBER DETECTOR

The 246-1 Solar Blind Infrared Ember Detector is an ultra sensitive optical sensor designed to detect, in the presence of ambient light, the radiant energy emitted by minute burning or glowing particles being transported on conveyor belts.



FEATURES

- Detects Moving Fires in less than 100 ms
- Solar Blind
- Extremely Stable
- Ultra Sensitive
- Rugged Physical Design
- 3 or 4 Wire Models
- Easily Mounted
- Latching or Non-latching

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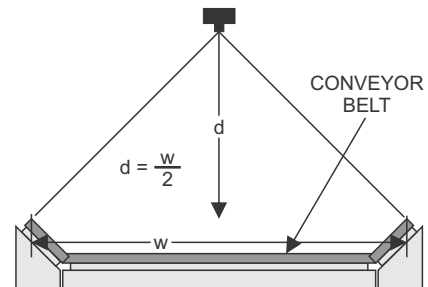
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PRINCIPLE OF OPERATION

The 246-1 Solar Blind Infrared Ember Detector employs a narrow band optical filter with a sapphire lens. This narrow band includes the high peak emissions generated by the formation of CO₂ (4.35 microns) and CO (4.6 microns). Sunlight, arc welding and artificial lighting have minimal radiation in this band. This precise filtering combined with extreme amplification and noise canceling techniques result in a reliable and dependable moving ember detector. When burning or glowing embers enter the cone of vision of a detector, it responds with an alarm signal. The detector latches into alarm unless specially wired in the non-latching mode. In the non-latching mode it responds with a 1 second pulse and returns to the standby state.

DETECTOR LOCATION

The Half Power Cone of Vision (HPCV) of the detector is 90 degrees and its maximum sensitivity is along its optical axis. At a height of 1.0 m (3.25 feet), a single detector can cover a belt as wide as 2.0 m (6.5 feet). The detector should ideally be mounted at a height equal to half the belt width. The exact location of the sensors along the length of the belt will depend on the belt speed, coasting distance and coasting time. In general, two detectors are recommended for every conveyor; one close to the head pulley and one close to the tail pulley.



SPECIFICATIONS

- Spectral Response: 3.8 to 4.5 microns
- Spectral Peak: 4.3 microns
- Field of View (HPCV): 90 Degrees
- Response Time: 100 milliseconds
- Sensitivity: 10 microwatts
- Operating Voltage: 24 VDC Nominal
- Current: 30mA operating, 40 mA alarm
- Temperature Range: -40 °C to 60 °C
- Dimensions: 85x85x70 mm (3.3x3.3x2.8")
- Weight: 0.34 kg (0.75 lb)