

Fire detection and evacuation solutions that save lives.

Infra-Red Transit Heat Sensor

Features

- Detection of hazards at temperatures below flame point
- Detection of both embers and buried hot spots
- IECEx and ATEX approved
- Twin high integrity detection circuit channels for maximum reliability
- Two wire operation - Powered by direct connection to standard fire trigger circuits or addressable loop interface
- Twin high integrity detection circuit channels for maximum reliability
- Single / Coincidence voting output
- Timed auto rest / coincidence analyser circuit
- Tuned response - solar blind
- Volt free relay contact output operation selectable as standard
- Fault monitored, with Test & Reset push buttons
- Field programmable
- Marking:
 - * EX II2 G Ex d IIC T5 Gb
 - * EX II2 D Ex tb IIC T95°C Db



Typical Applications

- Conveyors
- Biomass
- Waste recycling conveyors
- Food processing
- Production Lines
- Drying Lines

Description

The Infra-Red Transit Heat Sensor can trigger at temperatures as low as 100°C, when monitoring materials being transported on conveyor systems, before they have reached the ember or flame condition.

Its unique dual detector enhanced Infra-red monitoring has been created to detect black heat. Black body emissions occur for all material, the sensor is designed to detect a change in these emissions even at relatively low temperatures, when the material moves through its field of view.

The Infra-Red Transit Heat Sensor is specifically designed for hazardous areas and is IECEx / ATEX approved for Zones 1, 2 & 21, 22.

Air purging from a compressed air feed is used to maintain a lens cleaning system that ensures the prevention of dust settling on the sensor window.

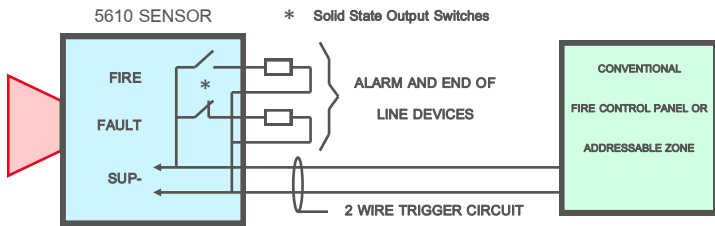
The Infra-Red Transit Heat Sensor incorporates within the unit a user programmable SIL switch. Option selection includes detector sensitivity settings, auto/manual reset sequence selection and single / coincidence voting from the two individual internal detectors for the alarm trip shutdown outputs.

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Standard / Low Power Mode

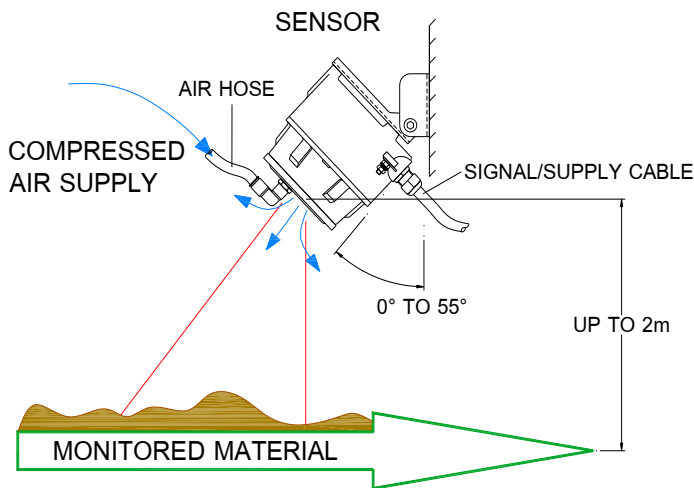
The unit can be used in two principle operating modes. Either relay mode, with its own 24 Vdc power supply or in low power mode as shown below.



System Setup

The sensor is located above or beside the materials transit path (conveyor, roadway, etc.) by means of the adjustable mounting bracket and aligned such that the monitored hazard passes through the sensor's field of view. The distance and angle of the sensor determine the width of the monitored path.

Typically conveyor widths of 0.8m to 4.2m can be monitored with a sensor mounted up to 2m above the conveyor at an angle of 0° to 55°.



The chart on the right indicates the correlation between the temperature and size of 'hot spot' anomalies for a typical installation to produce one or more detector channel activations at various trigger level settings.

Exact response is dependant on the emissivity factor of the monitored material, sensor orientation and target speed.

Specifications

Detectors	2 off - Employing reflective cone optical focusing system
Spectral Filter	5 - 14 μm (wide band)
Sensitivity	10 - 40 μW
Transit Speed	0.5 to 6 m/s
Sensor Head	3kg
Material	Aluminium Alloy LM25
Temperature	-20°C to +60°C
IP Rating	IP66
Supply Voltage	
Relay Mode	20 - 30 V dc
Low Power Mode	13 - 30 V dc
Supply Current	
Relay Mode	11 mA Quiescent 26 mA Max / Full Alarm
Low Power Mode	1.8 mA Normal Mode < 350 μA Fault 5 mA Fire + Alarm Load
Outputs	
Alarm/Trip Contact	2 Pole VFCO
Fault Contact	1 Pole VFCO
Rating	30 V dc - 500 mA
Indicators	Internal: 2 off - Red Channel LED's
Purge Air	
Input fitting	10mm Compressed Air Hose Adapter
Pressure	2.5 psi to 10 psi
Typical Delivery	30 litres/min

Item Numbers

4108-4001 Infra-red Transit Heat Sensor

