

5000 Series: Model 5610

Infra-Red Transit Heat Sensor

IECEX and ATEX Approved



The 5000 Series is an early warning infra-red heat sensor, which 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 5610 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 5610 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.

Features

Detection of hazards at temperatures below flame point including both embers and buried hot spots.

IECEX & ATEX approved

Twin high integrity detection circuit channels for maximum reliability

Two wire operation - Can be powered by direct connection to standard fire trigger circuits or addressable loop interface.

Single / Coincidence voting output

Timed auto reset / 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: **II 2 G d IIC T5 Gb**

II 2 D Ex tb IIIC T95°C Db

Applications

Conveyors

Biomass

Drying Lines

Waste Recycling Conveyors

Food Processing

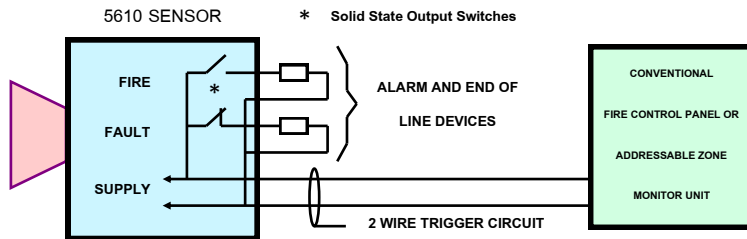
Production Lines

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Standard / Low Power Mode

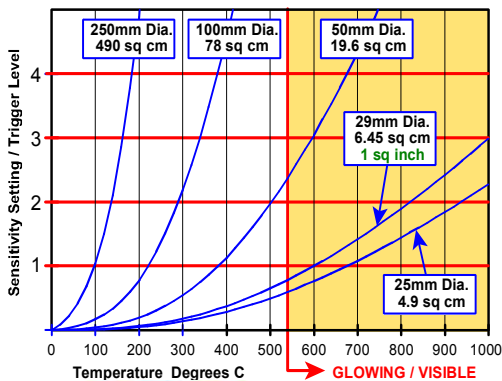
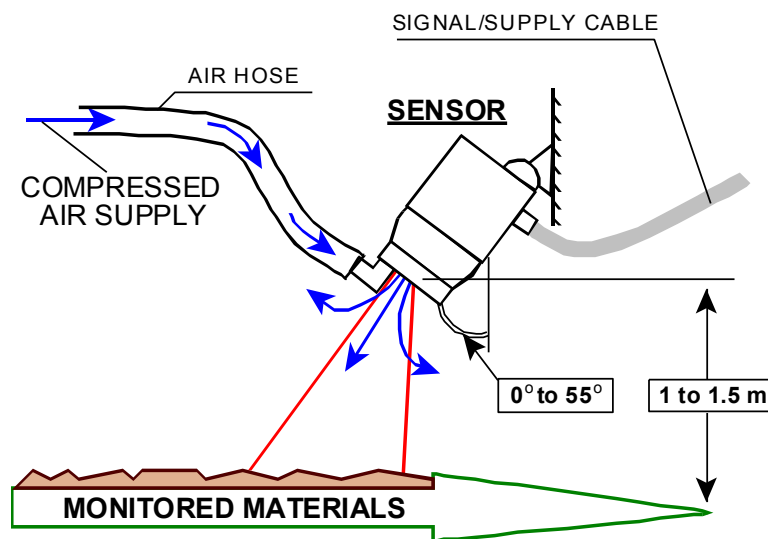
The unit can be used in two principle operating modes. Either relay mode, with its own 24 Vdc power supply or in low power mode (as shown below), see datasheet for further details



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 1.6 to 4.2 m can be monitored with a sensor mounted 1.0 to 1.5 m above the conveyor at an angle of 0° to 55° (see separate datasheet).



The chart (left) 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.

Specification

Detectors: 2 off - Employing reflective cone optical focusing system.

Spectral Filter: 5 - 14 μ m (wide band)

Sensitivity: 10 - 40 μ W

Transit Speed: 0.5 to 6 m/s

Sensor Head: 3kg

Material: Aluminium Alloy LM25

IP Rating: IP66

Supply Voltage:

Relay Mode 20 - 30 Vdc

Low Power Mode 13 - 30 Vdc

Supply Current:

Relay Mode: 11 mA Quiescent

26 mA Max / Full Alarm

Low Power Mode: 1.8 mA Normal Mode

< 350 μ A Fault

5 mA Fire + Alarm Load

Temperature: -20°C to +60°C

Outputs:

Alarm / Trip Contact - 2 Pole C/O

Fault Contact - 1 Pole C/O

Rating - 30 Vdc - 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

Minimum Delivery: 30 litres/min

Ordering Information

Description

5610: Exd Sensor

Part Number

722-010