

Model 5730

High Temperature Transit Flame Sensor



The 5730 High Temperature Transit Flame Sensor monitors high temperature materials (up to 240° on highest sensitivity), being transported on conveyor systems at speeds of between 0.5 and 6m/s, and triggers as the material reaches the ember or flame condition.

The sensor employs enhanced infra-red monitoring technology that analysis the levels of IR emission in the narrow band of 4.2-4.7µm. As the sensor is tuned to this band it is “solar blind” meaning the “background” and “transient” IR spectra are discriminated. This provides enhanced false alarm immunity.

Air purging from a mains operated Air Purged Blower (APB) air feed is used to maintain a positive air pressure in the sensor enclosure, and ensures the prevention of dust settling on the sensor window. The air supply is monitored by a pressure switch which on air failure is signalled as a fault status.

The 5730 incorporates within the unit a series of user programmable DIL switches. Option selection including detector sensitivity settings, auto/manual reset sequence selection and single / coincidence voting from the four individual internal detection channels for the alarm trip and shutdown outputs.

The sensor air pressure and signal cable connections are fault monitored and fail safe. The controller incorporates an auxiliary fault input and common fault output contact.

Features

Detection of ember and flame of high temperature product.

Air purged system for dusty environments with air pressure monitoring.

Four Channels of Isolated Detectors for maximum reliability.

Single / Coincidence voting output

Timed auto reset / coincidence analyser circuit

Tuned response — solar blind

Voting Logic & Latching options

Alarm & Trip Functions

Fault Monitored, with Test & Reset push Buttons

Field Programmable

Local Indicators

Applications

Food Processing

Tobacco Processing

Conveyors

Escalators

Baggage Handling

Radio Frequency Drying Systems

Microwave Drying Systems

Waste Drying Systems

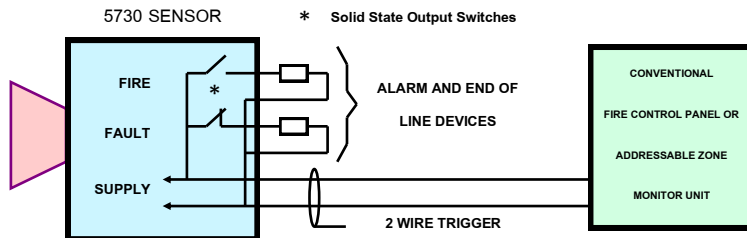
Drying Conveyors

Model 5730

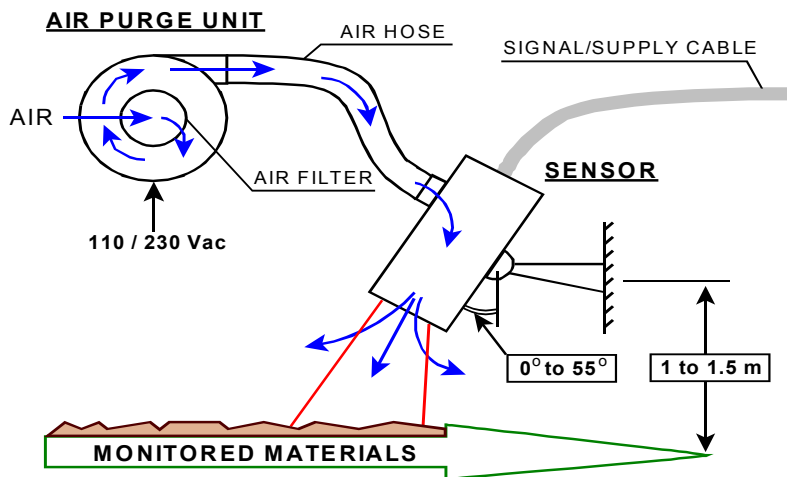
High Temperature Transit Flame Sensor

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



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.



The table below shows the width of the monitored product at the Lowest and Highest sensitivity settings. This is based on the sensor being installed at a 45° angle.

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

Sensor mounted 1m above Conveyor at 45° angle	
Sensitivity Level	Monitoring Width
Lowest	0.6m
Highest	1.6m

Specification

Detectors:	4 off Isolated Sensors.
Spectral Filter:	4.2 - 4.7 µm (narrow band)
Sensitivity:	4 Levels
Transit Speed:	0.5 to 6 m/s
Sensor Head:	1.5Kg
Material:	Polycarbonate
IP Rating:	IP66
Supply Voltage:	20-30 Vdc
Supply Current:	
Relay Mode:	11mA Quiescent
	26mA Max/Full Alarm
Low Power	1.8 mA Normal Mode
Mode:	<350µA Fault
	5mA Fire + Alarm Load
Temperature:	-20°C to +70°C
Outputs:	
Alarm Contact	1 Pole C/O
Trip Contact	1 Pole C/O
Fault Contact	1 Pole C/O
Rating:	30 Vdc - 500 mA
Auxiliary Input:	PSU / Charger etc.
Purge Air:	
	Input Fitting 45mm Hose Adaptor

Ordering Information

Description	Part Number
5730: Polycarbonate, 5040 (230 Vac) APB, 4metre x 45mm flexible air hose and clips Mounting arm and bracket	710-207
5730: Polycarbonate, 5041 (115 Vac) APB, 4metre x 45mm flexible air hose and clips Mounting arm and bracket	710-209
Sensor 5730 incl. bracket	720-212
5040 Air Purge Blower 230 Vac	710-040
5041 Air Purge Blower 115 Vac	710-041