

Model 5712

High Temperature Transit Flame Sensor



The 5712 High Temperature Transit Flame Sensor monitors high temperature materials (up to 240° on highest sensitivity), being transported on conveyor systems, 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 compressed air feed is used to maintain a positive air pressure in conjunction with an air knife to prevent 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 5020 controller is directly connected to the sensor. A series of user programmable DIL switches allows 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 aux. fault input & 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

Radio Frequency Drying Systems

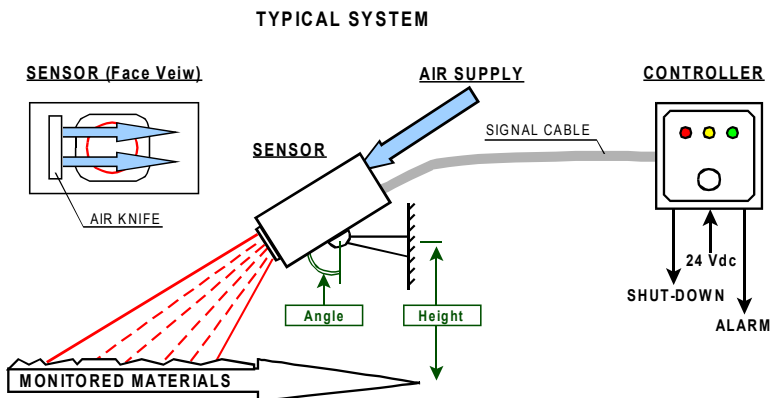
Microwave Drying Systems

Waste Drying Systems

Drying Conveyors

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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.

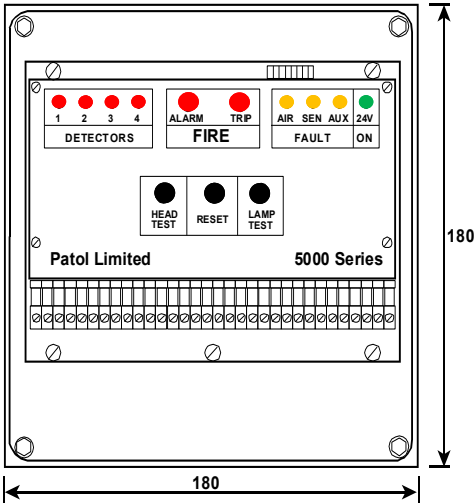
Sensor mounted 1m above Conveyor at 45° angle	
Sensitivity Level	Monitoring Width
Lowest	0.6m
Highest	1.6m

5020 Controller

Includes LED indication of the Four detector channels; along with LED indication and relay outputs for Alarm, Trip and Fault.

The control module is easily de-mountable and allows installation of the housing and site cables prior to fitment of the module.

The controller can be provided in an optional outer control panel together with power supplies, battery chargers, DIN rail terminals, etc. as required.



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:	2.9Kg
Material:	Stainless Steel
IP Rating:	IP67
Controller:	5020
Material:	Polycarbonate 1Kg (IP 66)
Supply Voltage:	20-30 Vdc
Supply Current:	35 mA Quiescent 70 mA Max / Full Alarm
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: 1/4 inch NPT Pressure: 0.7 Bar (10 psi) Delivery: 1.9 litres/sec (4 cubic feet/min)

Ordering Information

Description	Part Number
5712: Stainless Steel, Controller 5020,	710-008
10m cable, Mounting Bracket	
Sensor 5712 (without Controller)	725-015
Controller 5020	710-020
Optional Controllers	Reference Drawing
Single 5020 Control Panel with PSU /	11152
Charger, Reset & space for Batteries	
Dual 5020 Control Panel with PSU /	11153
Charger, Reset & space for	