# Model 5712

## High Temperature Transit Flame Sensor

**PATOL**
FIRE DETECTION SOLUTIONS

## 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

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.

## Applications

Food Processing

Tobacco Processing

Radio Frequency Drying Systems

Microwave Drying Systems

Waste Drying Systems

Drying Conveyors

# Model 5712

## High Temperature Transit Flame Sensor

### TYPICAL SYSTEM



SENSOR (Face Veiw)

AIR SUPPLY

CONTROLLER

SENSOR

SIGNAL CABLE

AIR KNIFE

Angle

Height

MONITORED MATERIALS

24 Vdc

SHUT-DOWN

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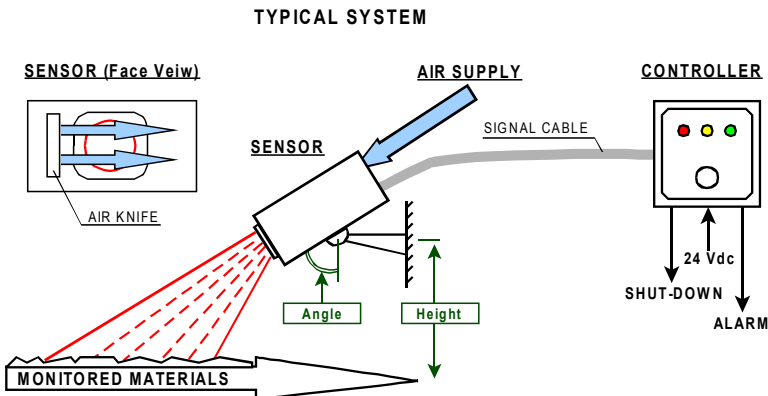
The sensor is located above or beside the materials transit path (conveyor, roadway, etc.) by means of the adjustable mounting bracket and aligned such that the monitored hazard passes through the sensor's field of view. The distance and angle of the sensor determine the width of the monitored path.

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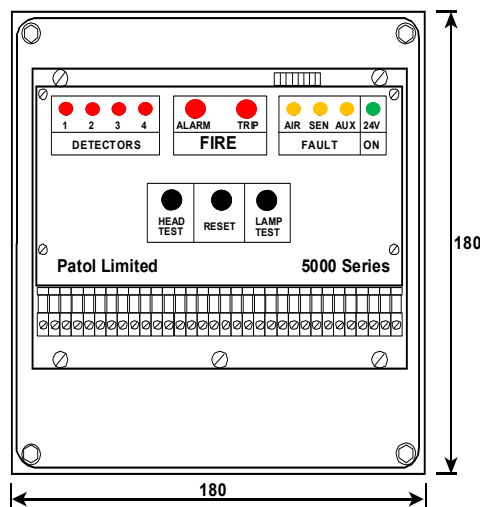
| Sensor mounted 1m above Conveyor at 45° angle | |
|---|---|
| Sensitivity Level | Monitoring Width |
| Lowest | 0.6m |
| Highest | 1.6m |

### 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 demountable and allows installation of the housing and site cables prior to fittment 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.



1 2 3 4    ALARM  TRIP    AIR  SEN  AUX  24V

DETECTORS    FIRE    FAULT    ON

HEAD TEST    RESET    LAMP TEST

Patol Limited    5000 Series

180

180

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

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