

# Model 602 & 611 Flame Detectors

## Model 602 & 611 Flame Detectors

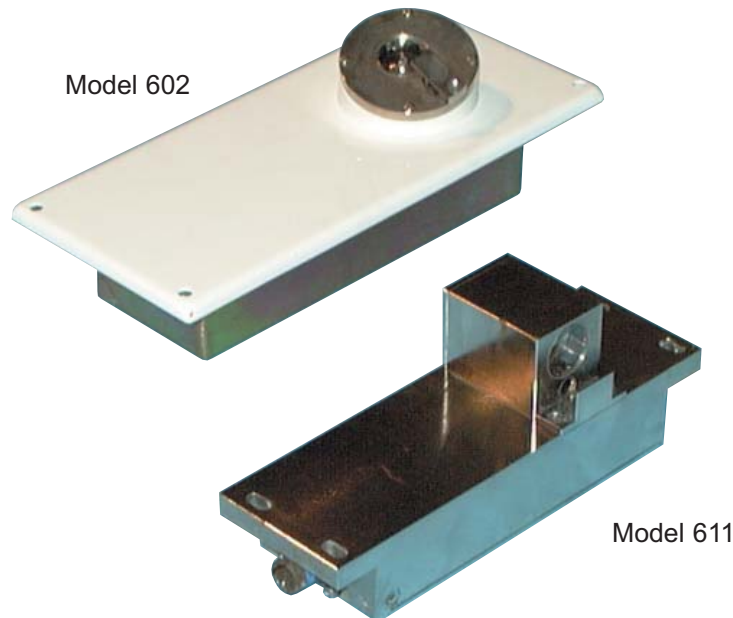
In confined public areas where the risk of fire is ever-present, the need for adequate fire detection is becoming increasingly important if unnecessary loss of life is to be avoided.

The CODEL Model 602 & 611 are designed to detect the ultra-violet light emitted by an open flame and to provide the earliest time for alarm and so maximise the time to instigate fire-fighting and evacuation procedures.

These robust, ultra-violet floor-mounted (611) and ceiling-mounted (602) flame detectors are easily installed and maintenance is limited to periodic cleaning of the lenses - as little as once per year depending on the application.

CODEL UV flame detectors, together with Model 121 smoke detectors, have been in successful operation in the 'roll-on-roll-off' trains operated by Eurotunnel for over 15 years.

- continuous self-test facility enables high accuracy & stability to be maintained over long periods
- designed to withstand the harshest environments
- modular construction ensures simple installation & low cable requirements
- rugged units, fully sealed to IP68, designed for very high availability with minimal maintenance requirements



## Total Solutions - Total Confidence



## Operating Principle

A typical open flame emits ultra-violet light having a wavelength between 185 & 260nm. The detector allows UV radiation to pass through a window to a nickel cathode to produce electrons via the photo-electric effect. These electrons are accelerated by an electric field and collide with the molecules of the relaxator gas in the detector. A cascade effect is produced as the molecules are energised creating an electrical current that is monitored by the sensor head.

The size of the current is used to determine whether the apparatus is operating in normal or alarm mode or whether there is a fault present in the system. In alarm mode a discrete signal is generated when UV levels produce a current of  $20\text{mA} \pm 2\text{mA}$ .

It is imperative that instruments of this nature do not generate false alarms and provide accurate and consistent service throughout. To this end the apparatus is equipped with an in-built self-test facility that continuously monitors the accuracy and performance of the unit.

## Specification

Range : normal -  $10\text{mA} \pm 1\text{mA}$   
: alarm -  $20\text{mA} \pm 2\text{mA}$

Fault Alarm : <8mA power failure, instrument failure or dirty windows

Response : detection of a reference fire in  
Time 10sec (900cm<sup>2</sup> of petrol at 25m)

Certification : shock to IEC571 first issue  
Tests

Construction : fully sealed to IP68

: vibration to IEC571 first issue

Operating : -20°C to +70°C  
Temperature

: EMI induced electric fields to IEC801-3 Class 3 at 10V/m

Power : -24V DC  
Supply

: EMI conducted electric fields to IEC801-4 Level 4 and BRB RIA No.12 to Fig.1 line H, J, K & L (indirect transient)

Output : 500Ω load maximum

: magnetic fields MIL STD461 and 462 to tests in RS01 Part 4, Class A3

# SmartCem

CODEL International Ltd.  
Station Building, Station Road  
Bakewell, Derbyshire DE45 1GE  
England

Tel: +44 (0) 1629 814 351  
Fax: +44 (0) 8700 566 307  
e-mail: [codel@codel.co.uk](mailto:codel@codel.co.uk)  
web site: [www.codel.co.uk](http://www.codel.co.uk)

**Distributor :**