The FLAMEVision family of flame detectors use patented IR array and triple IR solar blind technologies to provide reliable and cost effective fire detection solutions. FLAMEVision can be trusted in high dependency situations where fast acting and accurate flame detection is essential. FLAMEVision detectors offer superior performance in all weather conditions and all lighting situations with the added benefit of fire event location information provided by the IR array.

FLAMEVision can protect all hydrocarbon risks in classified hazardous explosive and non hazardous atmospheres. There is a wide range of system design options available with flexible monitoring and control interfaces and integrated video camera for verification purposes. Installation and maintenance procedures are easy and efficient, minimising the lifetime cost of ownership and reducing the need for complex test equipment and high level operator training.

Benefits of the FLAMEVision family

- Reliability Choice of IR array or enhanced Triple IR solar blind technologies allow users to tailor their systems to provide reliable and fast fire detection.
- Fast Acting FLAMEVision reacts to minimise the effect of fire and improve life safety through detection with less disruption and downtime.
- Accuracy Event location information will pinpoint fire using the IR array to allow targeted shutdown and suppression.
- Operator verification The optional built-in video camera assists operator verification and ensures optimum actions are taken. Additional benefit of post event analysis and to aid and verify alignment
- Optimum protection in all weather conditions
- FLAMEVision maintains sensitivity using the enhanced IR sensors through heavy rain, snow, fog and morning dew
- Use in Hazardous explosive atmospheres
- FLAMEVision is approved for protection regardless of area classifications for all applications throughout the facility
- Reduced spares inventory and simpler maintenance
- Intrinsically safe, low cost and easy to use test equipment simplifies maintenance and reduces service costs. Universal mechanical mounting and cabling arrangements makes
- FLAMEVision installation friendly
- Easy integration FLAMEVision interconnects to site control and safety systems via a range of standard industrial inter faces
- Dynamic masking FLAMEVision maintains detection coverage even when a flame is part of the process being protected
- Complete piece of mind FLAMEVision detectors continually monitor all electronics and perform regular optical window tests
FLAMEVision FV300

FLAMEVision FV300 uses Infra-Red Array based sensing technology to provide the ultimate programmable flame detector. An array of 256 infra-red sensors plus two optical channels view the protected area. Powerful algorithms running on a Digital Signal Processor (DSP) are tuned to the characteristics of a fire and analyse the signals from these channels to quickly and reliably identify fires. A key advantage of using an array is that the detector can accurately identify the location of the flame within the field of view. The location information is used to overlay a marker on the live video output to highlight the fire location. The user can quickly see the location of one fire or multiple fires and decide on the appropriate action. The location information is also available on the field network interface. User defined areas within the field of view can be masked and un-masked dynamically to improve reliability and maintain maximum coverage at all times. The detector can be supplied with an optional integral colour video camera to display a live image of the field of view, this is in addition to the alarm location and status information which is available as standard on the video output.

Features
- Advanced array based detector
- Powerful signal processing on DSP with algorithms to give reliable flame detection
- Detection range: Over 50 m for 0.1 m² n-heptane pan fire
- Field of view: 90° horizontal, 85° vertical with full range maintained
- High immunity to false alarms
- Solar blind
- Masking of areas in field of view
- Automatic optical path monitoring
- Advanced self test and service features
- Built-in video camera (option): View protected area with alar location and status overlay
- IEC 61508 Approved (SIL2) *¹

FLAMEVision FV400

FLAMEVision FV400 uses Triple IR Solar Blind technology for flame detection. This provides a reliable and cost effective solution in standard flame detection applications especially where there is a single hazard in the field of view. The FV400 FLAMEVision detectors use Triple IR Solar Blind sensing technology and flame detection algorithms to provide high performance sensing capabilities for hydrocarbon fires. This includes the ability to reliably sense flames through high densities of solvent vapours and black smoke, increasing the probability of early detection with consistent high sensitivity to flame throughout the whole field of view. They also ensure consistent detection of many different types of hydrocarbon fuels from alcohol to aviation fuel. Multiple interfaces are provided with the option of an integral CCTV camera to provide a visual means of operator verification.

Features
- Triple IR solar blind sensing technology
- Multiple Field Interfaces
- Detection range: Up to 65 m for 0.1 m² n-heptane pan fire
- Automatic optical path monitoring,
- Integral flame simulation and remote walk test help reduce the on going life time cost of the flame detection installation
- Video verification via the integrated optional flameproof camera

¹¹ note: FV400 feature coming soon.
**Technical Specifications**

**Mechanical - Detector**
- **Dimension:** 155.5 mm H x 153 mm W x 92 mm D
- **Weight:** 4 kg
- **Gland entry:** 2 x M20
- **Material:** Stainless steel 316L, ANC4BF-CLC to BS3146: Part 2
- **Guard/label plate:** Stainless steel 316S16 to BS 1449: Part 2
- **Screws external:** Stainless steel 316 A4
- **Detection window:** Sapphire
- **Camera window:** Toughened glass

**Mechanical - Bracket**
- **Dimension:** 181 mm H x 125 mm W x 95 mm D
- **Material:** Stainless steel 316S16 to BS 1449: Part 2
- **Weight:** 1.54 kg

**Environmental**
- **Operating temp:** -40°C to +80°C
- **Storage temp:** -40°C to + 80°C
- **Operating temp of camera:** -10°C to +50°C
- **Storage temp with camera:** -20°C to + 70°C (operating temperature is reduced for T5 risks)
- **Relative humidity:** 99% (non condensing)
- **Enclosure:** IP 66
- **Flameproof certification:** ATEX Ex II 2 G D, IECEx & FM *1
- **EN54 Approval**
- **CPD EN54-10:2002 + A1:2005**
- **FV400** is classified as Class 1 on the Extended and Normal range settings.
- **FV400** is certified as Class 3 on the Half range setting.
- **FV300** is classified as Class 1

**Detector performance**
- **Range (0.1m² n heptane):** FV400 65 m, FV300 50 m
- **Field of view:** 90° horizontal, 85° vertical

**Interfaces**
- **FV300**
  - Modbus
  - 4-20 mA Sink or source
  - Fire & fault relay contacts NO or NC
  - Composite video o/p
- **FV400**
  - Modbus
  - 4-20 mA Sink or source
  - Conventional detector I/F
  - Tyco MZX Digital
  - Fire & fault relay contacts NO or NC
  - Composite Video o/p (Camera option only)
  - Hart interface *2

**Electrical**
- **FV300**
  - **Supply voltage:** 20 to 30 Vdc
  - **Current consumption (max):** 196 mA quiescent, 205 mA Alarm (24 Vdc)
  - **Heater:** 90 mA@24vdc
  - **Connections:** 2.5 mm² (14AWG) Terminals
- **FV400**
  - **Supply voltage:** 15 to 30 Vdc
  - **Current consumption:** 12 mA quiescent 22 mA Alarm (24 Vdc - interface dependant)
  - **Camera:** 85 mA@24 V
  - **Window Heater:** 245 mA @ 24 V
  - **External supply required only for camera, heater or MOD-BUS options**
  - **Connections:** 2.5 mm² (14AWG) Terminals

**Camera Specification**
- **Composite video:** (1 V p-p) into 75 Ohm via twisted pair balum
- **Horizontal resolution:** Standard 450 TVL
- **Light sensitivity (-30 IRE):** 0.3 Lux

*1 note: FV400 feature coming soon.
*2 Feature implemented by future field software update
FLAMEVision Flame Detectors

Ordering Codes

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<tr>
<th>Code</th>
<th>Model</th>
<th>Description</th>
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<tr>
<td>516.300.006</td>
<td>FV311S</td>
<td>Infrared array flame detector</td>
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<tr>
<td>516.300.008</td>
<td>FV311SC</td>
<td>Infrared array flame detector - PAL camera</td>
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<td>516.300.007</td>
<td>FV311SC-N</td>
<td>Infrared array flame detector - NTSC camera</td>
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<td>516.300.411</td>
<td>FV411f</td>
<td>Triple infrared flame detector</td>
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<td>516.300.412</td>
<td>FV412f</td>
<td>Triple infrared flame detector with PAL camera</td>
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<tr>
<td>516.300.413</td>
<td>FV413f</td>
<td>Triple infrared flame detector with NTSC camera</td>
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Ancillary equipment

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<td>MB300</td>
<td>FLAMEVision mounting bracket</td>
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<tr>
<td>517.300.002</td>
<td>WH300</td>
<td>FLAMEVision weather hood</td>
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<tr>
<td>517.300.021</td>
<td>WT300</td>
<td>FLAMEVision walk test tool</td>
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<td>517.300.022</td>
<td>CTI300</td>
<td>FLAMEVision off-line configuration tool</td>
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<tr>
<td>517.300.024</td>
<td>CTI400</td>
<td>FLAMEVision off-line configuration tool</td>
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<tr>
<td>517.300.006</td>
<td>MK300</td>
<td>FLAMEVision field spares kit</td>
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