FLAMEVision Flame Detectors

THORN SECURITY

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.

FLAMEVision™

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 pin point 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 classification 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 interfaces.
- 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.

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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

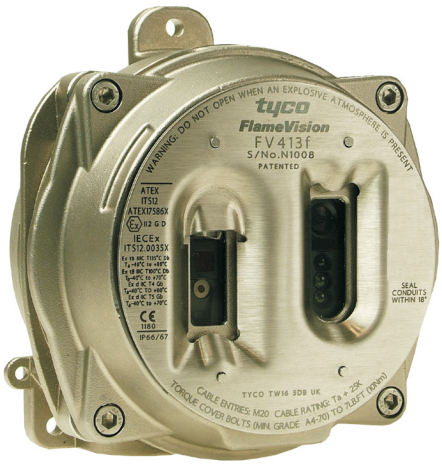
- Advanced array based detector
- Powerful signal processing on DSP with algorithms to give reliable flame detection
- Detection range: Over 50m for 0.1m^2 n-heptane pan fire
- Field of view: 90° horizontal, 85° vertical with full range maintained
- High immunity to false alarms
- Solar blind
- Masking 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 alarm location and status overlay
- IEC 61508 Approved (SIL2)

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 65m for 0.1m^2 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 flam proof camera



Technical Specifications

Mechanical - Detector

Dimension:	155.5 mm (6.1") H x 153 mm (6") W x 92 mm (3.6") D
Weight :	4 kg 8.8 Lb
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:	181mm (7.2") H x 125 mm (5") W x 95mm (3.75") D
Material:	Stainless steel 316S16 to BS 1449: Part 2
Weight:	1.54 kg 3.2 Lb

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 (FV400 pending FM approval)

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

Camera Specification

Composite video:	(1V p-p) into 75 Ohm via twisted pair balum
Horizontal resolution:	Standard 450 TVL

Light sensitivity (-30 IRE): 0.3 Lux

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 *

Electrical

FV300

Supply voltage:	20 to 30 Vdc
Current consumption (max):	196 mA quiescent, 205 mA Alarm (24 Vdc)
Heater:	90 mA@24 Vdc
Connections:	2.5mm^2 (14AWG) Terminals

FV400

Supply voltage:	15 to 30 Vdc
Current consumption:	12 mA quiescent 22 mA Alarm (24 Vdc - interface dependant)
Camera:	185 mA @24 vdc
Heater:	90 mA@24 vdc

External supply required only for camera, heater or MOD-BUS options

Connections:	2.5 mm^2 (14AWG) Terminals

* - Feature implemented by future field software update

FLAMEVision Flame Detectors

Ordering Codes

516.300.006	FV311S	Infrared array flame detector
516.300.008	FV311SC	Infrared array flame detector - PAL camera
516.300.007	FV311SC-N	Infrared array flame detector - NTSC camera
516.300.411	FV411f	Triple infrared flame detector
516.300.412	FV412f	Triple infrared flame detector with PAL camera
516.300.413	FV413f	Triple infrared flame detector with NTSC camera

Ancillary equipment

517.300.001	MB300	FLAMEVision mounting bracket
517.300.002	WH300	FLAMEVision weather hood
517.300.021	WT300	FLAMEVision walk test tool
517.300.022	CTI300	FLAMEVision off-line configuration tool
517.300.024	CTI400	FLAMEVision off-line configuration tool
517.300.006	MK300	FLAMEVision field spares kit
517.300.003	ADP300	Adaptor plate to mount FlameVision device to existing S200 mounting bracket

Thorn Security is a leading brand of fire detection products in the Middle East market. The Thorn Security fire detection product line includes a wide range of MZX TECHNOLOGY EN54 CPD approved fire detection products carrying approvals and cross-listings, including LPCB and VdS. The Thorn Security product lines are available through Thorn Security dealers in the Middle East. For more information, visit www.ThornSecurity.net or contact us by e-mail at thornsecurity@tycoint.com.

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