where detection means protection

cctv
visual flame detection system

True Flame Detection Technology
Hazard detection solutions for the oil industry.

Technologically advanced features, unrivalled in the marketplace.
An informed approach to flame detection

The MICROPACK Visual Flame Detection System is a Flame Detector and a CCTV Camera engineered together to provide precise flame detection, and CCTV surveillance. It is the safest and most advanced flame detection system available, and is proven reliable and robust, even in the harshest of environments.

Superior Immunity to False Alarms
Simply put, we see it. MICROPACK's Visual Flame Detectors discriminate between genuine fire conditions and other radiant sources that could cause conventional detectors to produce unwanted alarms, such as solar radiation, flare radiation, electric arc welding, hot CO2 emissions, and black body radiation.

“True Flame” technology without compromising detection
Superior flame detection technology is able to mask out “friendly fires” without having to desensitize fire detection capabilities.

Live Video for quicker response
A live video image is available from each camera to provide detailed information to the operator providing the ability for quicker response times to any incident. MICROPACK's unique image based detection technology employs specially designed software to process video image and instantaneously interpret flame characteristics.

Video Storage for post incident analysis
Video images can be recorded for post incident analysis and used for investigation purposes, training, and to assist with future accident prevention.

Remote Monitoring solutions reduce risk to operators
Should an incident occur in an unmanned area, the video images will allow suitable action to be taken before personnel access the area.

Advanced Optical Verification ensures continuous operation
The detector's optical test facility checks the window for contamination to ensure that the detector's field of view is not restricted by any obstruction placed immediately in front of the camera.

The system's surveillance aspect eliminates the need to dispatch operators to investigate alarms and reduces both the risk of injury to operators and the response time.
Advanced Visual Image Flame Detection for High Hazard Applications ...

### Offshore Drilling and Production Platforms
- Not affected by ice and water on the lens.
- Does not require shelter or shielding from the rain.
- Does not alarm to flare reflections from the process relief flare.
- Not affected by sunlight and hot objects in the field of view of the detector.

### FPSO’s
- Due to the close proximity of the process relief flare to the topside production modules and decks, IR based flame detectors will constantly false alarm to the flare reflections. Our Vision Based Flame Detection technology was specifically developed to address this challenge.

### Aircraft Hangars
- Will not false alarm to arc welding, X-rays or sunlight.
- Will not reduce its sensitivity when exposed to sunlight when hangar doors are opened.
- Provides remote video signal to guard station or security center for increased security surveillance.

### PetroChemical Plants
- Reductions in plant operating personnel demand that automatic response to fire conditions be immediate and fire responders have the most accurate information in order to combat fires. The CCTV function of Vision Based Flame Detection provides a real time live picture back in the control room, where operators can safely guide and advise personnel fighting the fire.

### Gasoline Transport Loading Terminals
- Provides additional video surveillance capability for distant monitoring of unmanned remote terminals.

### Pipeline Pumping Stations
- Not affected by hot machinery and CO2 exhaust gasses from turbine driven pumps and compressors.
- Remote monitoring of the entire pipeline network can be accomplished using the CCTV video capability of the system.

### Refineries
- Undiminished fire response in the presence of hot process, flares and fired processes.
- Video surveillance capability for remote pump pads and pilot buildings.

### Road Traffic Tunnels
- No false alarms to headlights, flashing lights, hot engines. Not affected by bright sunlight at tunnel entrances.
- Remote video capability can supplement existing road traffic surveillance camera network.
How does the MICROPACK visual flame detection system work?

The system works by utilizing a series of imaging based flame detectors; each detector operates as a stand-alone device and incorporates, within a single unit, an integrated CCTV system.

The system uses highly sophisticated Digital Signal Processing and Software Algorithms to process the live video image and interpret flame characteristics. These unique software algorithms are capable of discriminating between genuine fire conditions and other radiant sources that may cause conventional detectors to become desensitized or produce unwanted alarms.

The system is administered via central control equipment which provides the operator with full display and alarm handling facilities. Each detector provides local video data and fire alarm/fault signaling to the control equipment.

The system is flexible and can be configured to your particular requirements. Throughout the installation the detectors are fixed to ensure the facilities detection performance requirements are always met. Fixed detectors also allow the operator, when in an emergency situation, to quickly identify the area at risk through the control system.

The detectors are designed to easily interface with a MICROPACK Control System or interface through the plant wide Distributed Control System. This provides the operator with full display and alarm handling facilities and live video images in the control room. This remote imaging is particularly useful in areas that are normally unmanned.

We offer solutions

- Solutions for the high hazard industries
- Over 20 years of experience, with local support in major countries
- A long standing reputation as experts in hazard detection technologies
- Fire and Gas Detection Training
- On-Site Service and Maintenance
- Commissioning Services
- Installation and Supervision
- 24/7 Customer Support
- Spares Management
- Availability/Reliability Reviews
- Maintenance Optimization
Superior Flame Detection with Color Video

The MICROPACK CCTV Visual Flame Detector offering includes: our Flame Detector, Communications and Video Network accessories, Operator Interface Software, as well as support tools such as testing tools, surveys, and more.

- Designed to detect a hydrocarbon pool fire of 10Kw of Radiant Heat Output, RHO (1sq ft, .09 meter) at ranges of:
  - Black & White camera up to 65ft (20 meters)
  - Color camera up to 144ft (44 meters) within a 90° cone of vision in both indoor and outdoor applications.

- Detects radiation in the visible and near IR range.

- Available in Color or Black and White Video.

- Sensitivity is not affected by water on the optics, and are not blinded by contamination typically found in offshore environments.

- Longer Detection Range than conventional flame detectors. Saving installation costs.

**OPERATOR INTERFACE SYSTEM**

The system provides full display and alarm handling facilities for up to four monitors, audible alarms and operator controls. The monitors can be integrated into the Distributed Control System (DCS) or be stand-alone providing the operators with geographic mimics of the installed detectors and a live video image from the specific detector.

The live video image may be selected at any time allowing the system to be used for both surveillance and fire detection. The system will automatically generate audible and visual alarms under confirmed fire conditions. The interface can be configured to fully meet your specific requirements for control actions and video surveillance.
Temperature Range
Operating: -40°F to +158°F | -40°C to +70°C
Storage: -40°F to +176°F | -40°C to +80°C
Humidity: 0 to 100% RH

Operating Voltage
24VDC Nominal
18V to 32V Maximum
10W Typical Power Consumption

Flame Sensitivity - Black and White
1 sq ft n-Heptane fire @ 65ft | .09m n-Heptane fire @ 20m
Coverage: 90° cone of view

Response Time
10 seconds Approx.

Flame Sensitivity - Color
1 sq ft n-Heptane fire @ 144ft | .09m n-Heptane fire @ 44m
Coverage: 90° cone of view
Sensor: Low Light CCD
Resolution: 640x480 pixels
Video Output: NTSC or PAL 2 Wire Twisted Pair
Video User Interface: MICROPACK Control System or Conventional Digital Video Recorder/Video Switcher

Output(s)
Relay contacts alarm and fault
Current 4-20 mA
RS485 bidirectional serial communications link
Live Video

Hazardous Area Certification
ATEX EEEx-d, IIC T6
UL NEC class 1 Div 1 and Class 1 Zone 1
EXDII CT6 GB 3836.1: GB3836.2
CSA Exd llc

Ingress Protection
IP66
NEMA 4X

Fire Service Listing
FM 3260

European Directives
CE Certified

Enclosure
5.90”H x 5.90”H x 5.90”H Overall | 150mmH x 150mmW x 150mmL Overall
Material: LM25 (red epoxy coating)
Shipping Weight: 5.51 lbs | 2.5KG
Material: Stainless Steel
Shipping Weight: 13.23 lbs | 6KG

Connections
Power: 2 Wire
RS485: 2 Wire Twisted Pair
Video: 2 Wire Twisted Pair

Conduit Entry
1x3/4 NPT
2x1/2 NPT

For over 20 years, MICROPACK has been actively working with the oil & gas industry, and today is recognized as experts in hazard detection technologies.

In the Americas
MICROPACK Detection (Americas) Inc.
1227 Lakecrest Court
Fort Collins, Colorado, 80526
USA
Tel: 1 970 377 2230
Fax: 1 970 377 2273
Email: info@micropackamericas.com
www.micropackamericas.com

In the UK and Europe
MICROPACK (Engineering) Ltd.
Fire Training Centre, Schoolhill
Portlethen, Aberdeen
AB12 4RR, Scotland
Tel: +44 (0)1224 784055
Fax: +44 (0)1224 784056
Email: info@micropack.co.uk
www.micropack.co.uk

Represented by: