

We see what you can't. The future of flame detection is here.

Intelligent Visual Flame Detector

FDS301HD

The New Benchmark in Visual Flame Detection

- Only flame detector FM-certified to 160m flame detection.
- Only flame detector to transmit HD video and 24VDC power over a single instrumentation pair (up to 1km).
- Fourth-generation visual flame detector, built on 30 years of Micropack innovation.

Product Overview

The Micropack FDS301HD is the world's most advanced visual flame detector. Designed for the most demanding industrial environments, it combines 2MP HD IP video surveillance with MAVIS (MAchine VISION) - Micropack's proprietary intelligent flame detection algorithm.

The result is fast, reliable detection with industry-leading immunity to nuisance alarms, proven in harsh real-world conditions.

With FM-certified performance at 160m, the FDS301HD offers the longest detection range of any flame detector available. And with HD video and 24VDC power transmitted over a single instrumentation pair to distances up to 1km, it sets a new standard for ease of installation and retrofit flexibility.

Features and Benefits

Video + Power over a Single Pair

- 2MP HD IP video and 24VDC power transmitted on a single-pair Ethernet line.
- Transmission distance up to 1km using standard instrumentation cable.
- Reduces cabling cost and complexity.
- Ideal for retrofit and legacy detector replacement.

FM-Certified 160m Detection Range

- Detects flames at distances up to 160m.
- Certified to FM 3260 performance standards.
- Provides the largest coverage of any fixed hazardous area certified flame detector worldwide.



MAVIS Intelligent Flame Detection

- Proprietary algorithm developed from decades of flame behaviour analysis.
- Accurately identifies genuine flames while rejecting false sources (flare reflections, hot CO₂ emissions, sunlight).
- Maintains sensitivity in challenging outdoor conditions.

HD Video Recording & Incident Verification

- Live 2MP HD colour video stream (ONVIF compliant).
- On-board micro-SD card records pre- and post-alarm footage.
- Provides operators with both real-time awareness and permanent incident evidence.

Engineered for Reliability

- Continuous optical integrity test ensures detector availability.
- Microprocessor-controlled heated optics maintain performance in snow, ice, condensation, and other harsh weather.

Proven Heritage

- Fourth-generation Micropack visual flame detector.
- Backed by 30 years of industry leadership and global field experience.

Applications

- Offshore oil & gas platforms
- Petrochemical and LNG facilities
- Power generation plants
- Chemical processing plants
- Retrofit and upgrade projects

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ISO 9001:2015 Certified



Micropack
CONSILIUM SAFETY GROUP

Technical Specification

Detection Principle

Intelligent Visual Flame Detection (iVFD) with MAVIS

Video

2MP HD IP video, ONVIF compliant; onboard micro-SD recording of pre/post alarm footage

Transmission

HD video + 24VDC power over single-pair Ethernet

- Transmission distance: up to 1km along standard instrumentation cable
- Alarm and communication outputs via separate wiring

Detection Range

Up to 160m (FM-certified, world-leading)

Testing

Continuous optical integrity test; compatible with long-range flame simulator

Environmental Protection

Heated optics; reliable performance in snow, ice, condensation

Environmental

Operating Temp: -76°F to +185°F (-60°C to +85°C)
Storage Temp: -76°F to +185°F (-60°C to +85°C)
Humidity: 0 to 95% RH non-condensing

Flame Sensitivity

Fuel	Fire Size	Distance
n-Heptane pan fire	1 foot x 1 foot pan	525 feet (160m)
n-Heptane: direct sun-light	1 foot x 1 foot pan	525 feet (160m)
n-Heptane: modulated sunlight	1 foot x 1 foot pan	525 feet (160m)
n-Heptane: modulated black body	1 foot x 1 foot pan	525 feet (160m)
n-Heptane: Arc welding	1 foot x 1 foot pan	525 feet (160m)
n-Heptane: 1000 W lamp	1 foot x 1 foot pan	525 feet (160m)
Gasoline	1 foot x 1 foot pan	525 feet (160m)
Diesel	1 foot x 1 foot pan	328 feet (100m)
Methane Jet Fire	36" plume	100 feet (30m)
Ethanol	1 foot x 1 foot pan	85 feet (25m)

Operating Voltage

24 Vdc Nominal – (Range 18 to 30 Vdc)

Power Consumption

6 W minimum (without heater), 15 W at 3.0Vdc with heater on maximum

Field of View

100° horizontal by 65° vertical

Speed of Response

<7 seconds (Typical)

Enclosure

Dimensions: 4" Dia x 8" L (inches) 100 mm Dia x 200 mm
Material: Copper free aluminum or 316 stainless steel
Entry size: 3/4 inch NPT or M25, Single or Dual
Weight: Aluminum 5.5 lbs (2.5 Kg)
Stainless steel 13.2 lbs (6 Kg)

Outputs

Alarm Relay, Fault Relay, 0–20mA, HART, OPC UA, ONVIF EOP Live colour and mono video

Certification

FM approved
Class 1 Div 1, Groups B, C, D T4*
Class 1 Zone 1 AEx/Ex db IIC T4*
Ambient: -50°C to +85°C*



ATEX II 2 G Ex db IIC T4*
IECEx Ex db IIC T4*
Ambient: -60°C to +85°C*



INMETRO Ex db IIC T4*
PESO Ex db IIC T4*
Ta= -60°C to +85°C*



Performance approvals
FM 3260*

Ingress:
IP67 | NEMA type 6P*



IEC 61508:
Certified SIL 2 Capable*

Marine:
DNV GL Type Approval*
ABS Product Assessment*



* = pending between certification and accessories sections.

Accessories

- Flame simulator (FS301)
- 2", 3" & 4" Pole mount bracket
- Retrofit mounting bracket
- Marine mounting bracket
- Sunshield
- Duct Mount Bracket
- Air Shield
- Detector Sealing Kit

30 years of leadership in visual flame detection. The FDS301HD sets the global standard.

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