Solutions brief

Flare Monitoring

Ensuring compliance, optimising efficiency

MOTOROLA SOLUTIONS

See what you've been missing:

Advanced flare monitoring for enhanced efficiency and compliance.

In the Energy and Natural Resources sectors, maintaining compliant and efficient flare operations is critical. Traditional monitoring methods are often labor-intensive, inconsistent, and may not provide the real-time data needed to prevent environmental issues and fines.

AI-driven flare monitoring system

Motorola Solutions offer a cutting-edge, AI-powered solution that transforms flare management. Our system provides 24/7 monitoring, automated adjustments, and comprehensive data logging, ensuring your operations are:

Compliant

Meet and exceed regulatory requirements, including EPA Method 22.

Efficient

Optimise combustion to reduce emissions and fuel consumption.

Proactive

Identify and address potential issues before they escalate.

Key features and benefits:

- **24/7 monitoring and logging**
  Continuous, around-the-clock surveillance of flare activity.
- **EPA method 22 opacity monitoring**
  Automated logging of opacity for compliance.
- **Flame and pilot health monitoring**
  Ensure proper combustion and prevent unlit flares.
- **Automated air/steam injection adjustment**
  Optimize combustion for cleaner emissions.
- **Flare size and colour monitoring**
  Provides data on the size and color of the flare.
- **Smoke size and color monitoring**
  Provides data on the size and color of any smoke (including black smoke).
- **Smoke density tracking**
  Measures and records smoke density.
- **Flare health history**
  Track performance over time for informed decision-making.
- **Automated reporting**
  Generate compliance reports with ease.
- **Smart alarms**
  Customisable alerts for proactive issue resolution.
- **Cameras and VMS integration**
  Camera agnostic and pre-built VMS integration with major providers.
- **SCADA integration**
  Seamless data integration with existing systems (MQTT, Modbus TCP).
- **Sensor data integration**
  Incorporate data from other sensors (e.g., rain sensors) for enhanced accuracy and conditional alarms.

Advanced monitoring for optimal performance

Integration with harsh-environment cameras

Our system is designed for integration with a variety of camera technologies, including specialised cameras built to withstand the harsh conditions typical of energy and natural resources environments.

These include:

→ **Thermal imaging cameras**

Provide continuous monitoring even in low-visibility conditions such as darkness, smoke, or fog. They are crucial for detecting pilot light outages and ensuring continuous combustion.

→ **Ruggedized and explosion proof visuals cameras**

Ruggedized and explosion proof visuals cameras: Enclosed in robust housings, these cameras resist dust, moisture, corrosion, and extreme temperatures, ensuring reliable operation in demanding industrial settings.

By integrating these complementary camera systems, it provides a comprehensive monitoring solution that maximises uptime and accuracy.

ExSite Enhanced IR 2 Series PTZ

Rugged explosion-proof camera with long-range IR illuminator to detect threats even in total darkness in hazardous sites.

ExSite Enhanced 2 Series PTZ

Heavy-duty explosion-protected camera for oil field and gas sites with harsh environmental conditions.

ExSite Enhanced Bispectral 2 Series PTZ

Tough explosion-proof video security camera with visual and thermal imaging for superior detection in oil and gas facilities.

ExSite Enhanced 2 Series Fixed

Bullet explosion-proof oil field security camera designed to monitor targeted hazardous locations in most weather conditions.

ExSite Pro IR PTZ

Cost-effective, outdoor-rated oil rig camera designed with aluminum housing and long-range IR illumination for superior visibility.

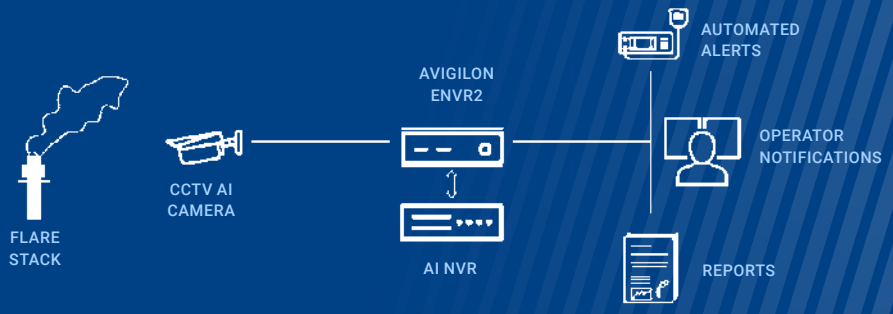
ExSite Enhanced Thermal 2 Series Fixed

Thermal camera to detect threats in most environmental conditions, including overheating equipment with radiometric capabilities.

See our heavy-duty camera range >

How our solution works

Our system uses advanced AI and computer vision to analyse flare activity in real-time. Here's a closer look at its capabilities:



→ Continuous monitoring

High-resolution cameras and sensors capture flare data 24/7, regardless of weather conditions. Flame stability and size.

→ AI-powered analysis

Proprietary algorithms analyse the captured data to assess:

- Flame stability and size
- Smoke presence, density, color, and size
- Opacity levels
- Pilot light status

→ Automated adjustments

Based on the analysis, the system can automatically adjust air or steam injection to optimise combustion efficiency, reducing emissions and ensuring compliance.

→ Real-time alerts

Customisable smart alarms notify operators of any deviations from optimal performance or compliance thresholds.

→ Data logging and reporting

All data is securely logged and can be used to generate detailed reports for compliance, analysis, and process improvement.

→ Integration and customisation

The system can be integrated with existing SCADA systems via industry-standard protocols (MQTT, Modbus TCP) and can be customised to meet specific operational needs, including the incorporation of other sensor data.

Benefits for your operations:

Environmental compliance
Minimise emissions and avoid costly fines.

Operational efficiency
Optimise fuel consumption and reduce operating costs.

Enhanced safety
Proactively identify and address potential safety hazards.

Data-driven decisions
Gain valuable insights into flare performance for continuous improvement.

Reduced labor costs
Automate manual monitoring tasks.

Improved stakeholder relations
Demonstrate a commitment to environmental responsibility.

To learn more, visit: www.motorolasolutions.com

MOTOROLA SOLUTIONS

Motorola Solutions Australia, 10 Wesley Court, Tally Ho Business Park, East Burwood VIC 3151 Australia. motorolasolutions.com

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. ©2025 Motorola Solutions, Inc. All rights reserved. 05-2025 [MC05]