

MFE
INSPECTION
SOLUTIONS



MFE SPOT CONNECTED GAS DETECTION SOLUTION

Robotic Gas Detection with Blackline Gas Detector on Spot

The MFE Spot Connected Gas Detection Solution combines Boston Dynamics' Spot® robot with Blackline Safety's cloud-connected portable gas detector to enable real-time gas monitoring in hazardous environments. Teams can stream live atmospheric data remotely, monitor conditions live, and trigger automated mission responses, improving safety and decision-making before personnel enter the area.

See the Environment Before You Enter

Gas detection has traditionally required sending a worker into the environment first. That approach limits visibility and introduces risk from the start. By combining robotic mobility with connected gas detection, teams can collect atmospheric data remotely, stream live atmospheric data, and decide how to proceed before anyone is exposed.



Deploy

Spot enters hazardous or confined areas while the gas detector monitors gas conditions.



Monitor

Gas readings and alerts are visible on the Spot tablet and streamed to Blackline Live software for centralized monitoring.



Respond

If gas thresholds are reached, the system can pause, reroute, or return Spot to safety.

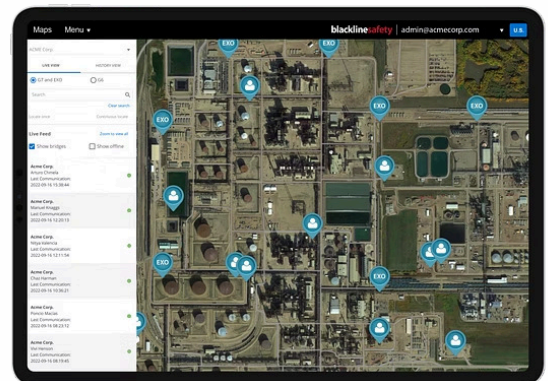
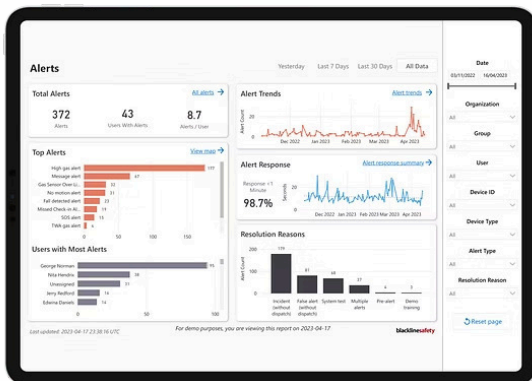


Share

Data streams through Blackline's connected safety platform for live visibility and site awareness.

Built for Real-World Safety

This solution is not just about collecting data—it's about acting on it. Spot is not intrinsically safe by design, which makes real-time gas detection critical. If conditions move toward a hazardous or explosive environment, the system can automatically trigger mission changes—helping protect both personnel and equipment. At the same time, the gas detector continues monitoring independently, ensuring gas data collection does not stop during a safety response.





Key Capabilities

- Remote gas detection on Spot
- Real-time visibility on Spot tablet
- Direct-to-cloud data streaming to Blackline Live
- Configurable threshold-based multi-gas monitoring (pause, return, shutdown)

Applications

- Gas leak detection
- Confined space pre-entry
- Emergency response
- Hazardous area monitoring
- Routine robotic patrols

Industries

- Oil & Gas
- Chemical Processing
- Semiconductor Manufacturing
- Power Generation
- Industrial Facilities
- Emergency Response

Technical Overview & System Specifications

System Integration

- Blackline Safety connected gas detector integrated with Spot
- Gas readings visible on Spot tablet and in Blackline Live during operation
- Independent operation if Spot powers down

Gas Detection

- Supports up to 5 gases simultaneously
- Detects 20+ gases: LEL, H₂S, CO, O₂, ammonia, SO₂, VOCs
- Cartridge types: single-gas, multi-gas diffusion, multi-gas pump
- Hot-swappable modular sensor design

Connectivity

- Cellular connectivity (4G/3G/2G)
- Real-time cloud data streaming
- Blackline Live monitoring platform
- Blackline Analytics reporting
- Over-the-air firmware updates and configuration

Environmental Ratings

Storage Temperature	-30°C to 60°C (-22°F to 140°F)
Operating Temperature	-20°C to 55°C (-4°F to 131°F)
Charging Temperature	0°C to 45°C (32°F to 113°F)
Ingress Protection	Designed to meet IP67

Certifications: Blackline Gas Detector

Intrinsic Safety	Class I Division 1 Group A, B, C, D T4; ATEX; IECEx; UKCA (for gas detector only)
Regulatory	SAR, RoHS, CE, RCM

Note: Certifications apply to the Blackline Safety device only and do not apply to the Spot robot or the full integrated system.

Integrated Gas Detector Capabilities

Integration	Blackline Safety multi-gas detector integrated with Boston Dynamics' Spot® robot
On-Robot Visibility	Gas readings and alerts visible directly on the Spot tablet during operation
Threshold-Based Response	Triggers mission changes when defined gas levels (e.g., LEL) are reached
Mission Actions	May include pausing the mission, sending Spot to a rally point, returning to base, or stopping operation for reassessment
Independent Operation	The gas detector remains active and continues monitoring if Spot powers down

Blackline Safety Solution Specifications

Cartridge Types	Standard, Single-gas, Multi-gas diffusion, Multi-gas pump
Multi-Gas Capability	Supports monitoring for up to five gases simultaneously
Supported Gas Types	Supports detection of over 20 gases, including LEL, H ₂ S, CO, O ₂ , ammonia, sulfur dioxide, VOCs (via PID)
Gas Alerts	Under-limit, over-limit, TWA, STEL, high gas, and low gas alerts



Deploy a Smarter Safety Workflows

Ready to bring robotic gas detection into your operation?

MFE works with your team to evaluate your site, configure the right solution, and support deployment in real-world conditions.

Email Us

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Learn More

mfe-is.com/product/mfe-spot-connected-gas-detection-solution/