

METHANE FROM FLARING TOOLKIT



Can I identify a flare with a performance issue: Alarm systems – Acoustic Alarms

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Summary

There are a range of flare monitoring systems to detect and alarm if the flare is unlit. Each technology utilises a feature of the flare such as heat, light or sound.

In some countries, to comply with environmental regulations it is essential to confirm that the main flare or pilot flare always remains lit.

Where a flare is unintentionally unlit the methane emissions are much higher than reported based upon flow rates.

Acoustic monitoring systems respond to the specific sound signature of a pilot burning that is transferred along the pipe work.

Where cold flares are in operation (where emissions can vary between vented gas and combusted gas) the inclusion of alarm systems can help identify what operating state the system is in.

How it Works

Flame status can be determined by several means including monitoring heat, ionized gas, light or sound. To give constant feedback of pilot status one of the following systems will need to be used:

- Heat – Thermocouples
- Ionised Gas – Flame ionisation detection
- Light – IR or UV systems
- Sound – Acoustic systems

Whilst standards such as API 537 require the use of pilots in the flare, there are a large number of older facilities that operate without pilots.

For choosing properly the flame monitoring system, it is important know if it will supervise a pilot flame or a flare flame.

Technology	Individual pilot	Ground level Maintenance	Instantaneous response
Thermocouple	X	X	
Fiber Optic	X	X	X
Optical at grade		X	X
Acoustic	X		X
Flame ionization	X		X

Advantages

- ✓ Easy to install and maintain
- ✓ Operate from grade-level, no need to access the flare
- ✓ Instantaneous response

Limitations

- ✗ May not be able to distinguish between pilot or main flare
- ✗ Interference from other noise sources
- ✗ requires access to power and data management systems

Go Deeper

- [Vendor website: Argo](#)
- [Vendor website: Aspire](#)

Case study

Case study to be added in the future

Can I identify a flare with a performance issue?



Can I identify a flare with a performance issue: Satellite monitoring – Wide area methane emissions monitoring



Can I identify a flare with a performance issue: Optical Gas Imaging



Can I identify a flare with a performance issue: Helicopter Optical Gas Imaging



Can I identify a flare with a performance issue: Point Sensors and Arrays



Can I identify a flare with a performance issue: Alarm systems – Image Processing