



ACOUSTIC MONITORING



AIM[™]
ARMSTRONG INTELLIGENT MONITORING

ISA100
Wireless
COMPLIANT

Why Monitoring Valves?

Fugitive emissions are unintended or irregular releases of gases or vapors from pressurized system, either due to faulty equipment, leakage, or other unforeseen mishaps. Leak detection is an essential component of risk management as it allows the operator to respond to the leaks to prevent further escalation of incidents.

Pressure/Safety Relief Valves are necessary to the protection of many processes but most of these are known to be continuous sources for leakage. Regardless of whether these gases, hazardous area pollutants or more benign fluids such as steam, are released to an enclosed recovery system or to the environment, it is important to identify the source, time, and magnitude of the release.

There are **four benefits** of valve monitoring:

Safety

- It reduces exposure of employees to potentially harmful emissions and fluids as well as exposure of property to potentially highly corrosive fluids.

Environmentally

- It reduces global warming and greenhouse gases getting to the atmosphere.

Economically

- It makes sure the process is efficient by limiting downtime and reducing losses of pressurized gases.

Legally

- It helps avoid fines from local and states regulated by complying with legislation.

There are **three challenges** for effective valve monitoring:

- Identifying a failure – What, when, and where?
- Evaluating the scope – How big of an impact?
- Measuring the impact – Value the tangible and intangible losses.

AIM® enables you to tackle all three challenges with one system solution that combines a mix of methods including valve specific acoustic and temperature monitoring with integrated smart wireless solutions.

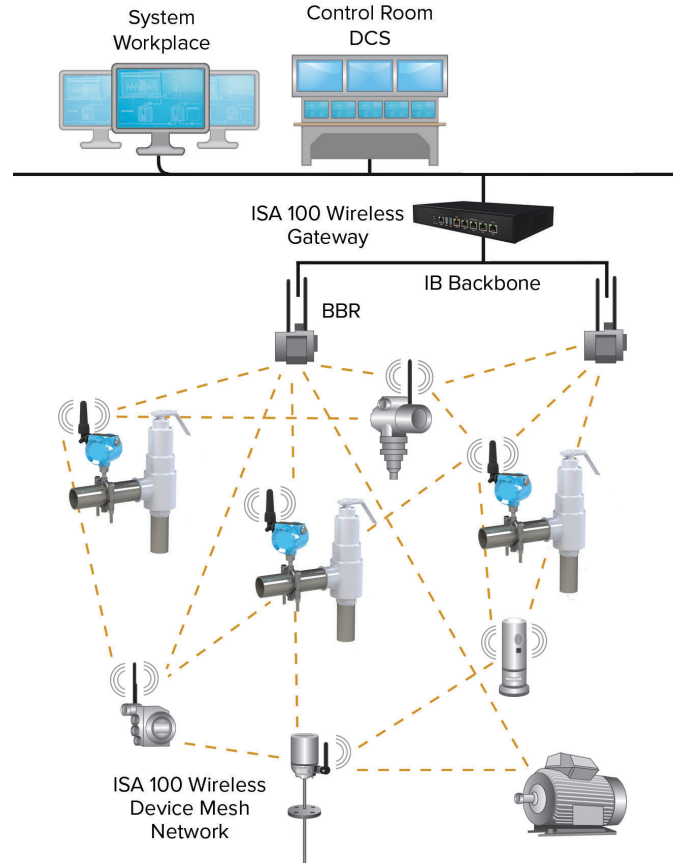


ISA100 Wireless™ Protocol

ISA100 Wireless™ is the only industrial wireless protocol standard to incorporate IPv6 directly as part of its network layer and transport layer. ISA100 Wireless™ supports multiple subnets which enables sensors to be grouped for traffic and network management, while breaking the network into zones for security reasons. ISA100 enables backbone-level routing which is also supported in ISA100 Wireless™.

ISA100 Provides:

- Best in class transmitter for application.
- Robust encryption technology.
- Globally accepted standard.
- Downtime free communication.
- Control of latency and low error rates.



Simple • Smart • Sustainable



INSTALL



JOIN NETWORK



MONITOR

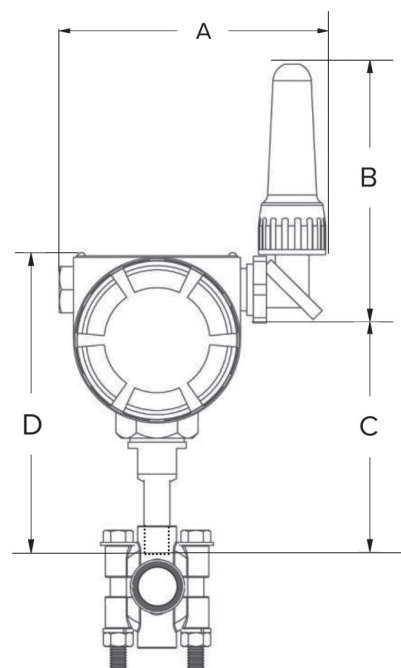


DCS INTEGRATION

- No integration to external software necessary.
- Transmitted Information to gateway:
 - **Channel 9:** 0–255 value of the level of sound detected by the monitor
 - **Channel 10:** The temperature detected at the tip of the stem of the monitor (skin temperature)
 - **Channel 11:** Number of occurrences where the acoustic level exceeds a defined threshold (with reset).
 - **Channel 12:** Calculate the total time that a lift is detected between resets (in seconds).
- 100+ NAMUR NE107 diagnostics available.
- Acoustic range specifically calibrated for valves
- Patented waveguide for proper acoustic filtration and vibration resistance.
- Non-intrusive installation, clamped directly on the pipe downstream of the valve.
- Waveguide hardware allows multiple transmitter installation orientations.
- 24/7 monitoring of the valve population.
- AIM® devices scattered in the plant will strengthen the wireless network.

SPECIFICATIONS	
Housing Material	Epoxy coated aluminum
Waveguide Material	CF8M casting
Protection Rating	IP66
Hazardous Location	Class I, Division 1, ATEX Zone 0
Ambient Temperature	-40°F to 158°F (-40°C to 70°C)
Min. Operating Pressure	15psig (1barg)
Max. Process Temperature	824°F (440°C) *
Battery Type	Epoxy Lithium-metal battery pack
Pipe Diameter	½" to 12" (DN15 to DN300)
Weight (without waveguide)	4.1lbs (1.9kg)

* See IOM, not derated on ambient temperature using specific installation kit.



DIMENSIONS		
	[in]	[mm]
A	6.4	162
B	5.0	128
C	5.2	131
D	6.5	164



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