

Flow Noise Diagnosis Function

ADMAG Total Insight Series AXG Magnetic Flowmeters

Yokogawa's latest generation of ADMAG Total Insight Series contributes to stable measurement and stable plant operations with its unique dual-frequency excitation method that provides stable flow measurement with high flow noise immunity and abnormality detection capabilities before the output becomes unstable.

Introduction

Magnetic flowmeters seldomly fail because of no mechanical moving parts. However, flow measurement can sometimes be affected by bubbles, solids or sudden change of conductivity. These process conditions cause fluctuating outputs, resulting in product quality concerns. To maintain reliable flow measurement, the flow-meters must have the performance capability to cope with such disturbances

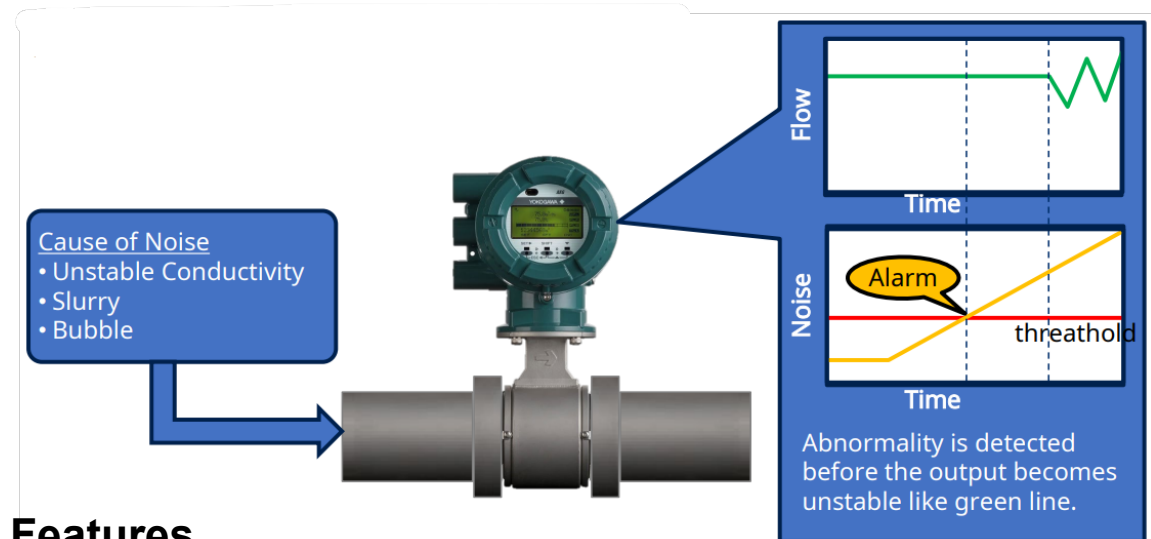


Mechanical Flow in Operation

Proposal

ADMAG Total Insight series AXG Magnetic Flowmeter has the unique system "[Dual Frequency Excitation](#)". It is capable of **stable flow measurement with high noise immunity**. With [Flow Noise Diagnosis Function](#), AXG can detect the following abnormalities.

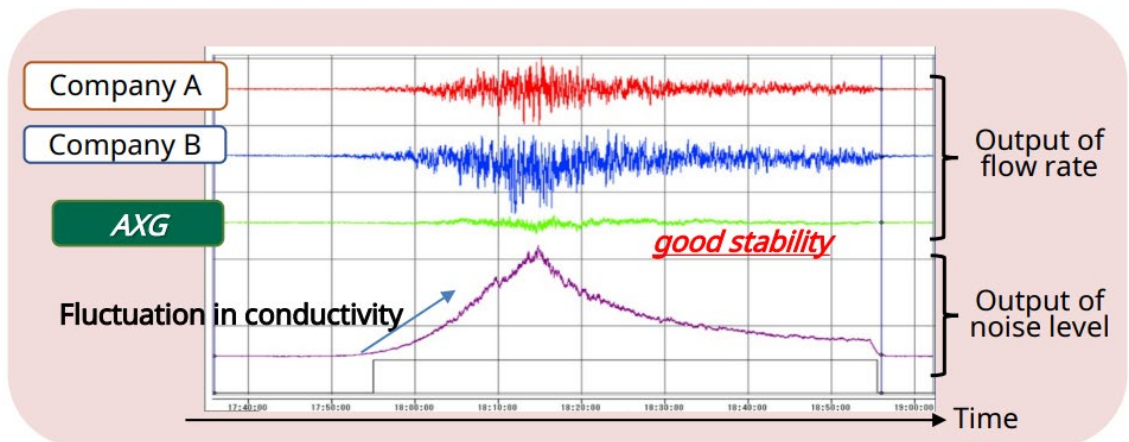
- Bubbles due to pump cavitation
- Conductivity change due to chemical input or reduction in pump capacity
- Mixing of slurry or change in process condition
- Adhesion to the electrodes over time



Features

The graph below shows an example of measurement results. The flow output of AXG is compared with that of other company's flowmeters with unstable conductivity condition. **AXG outputs more stable flow rate** than the magnetic flowmeters of Company A and Company B.

In addition, **AXG is capable of outputting application noise** (purple line). This output can be used for detecting the abnormality of flow before the output becomes unstable.



AXG Magnetic Flowmeter
Integral Type



AXG Magnetic Flowmeter
Remote Sensor



AXG4A Magnetic Flowmeter
Remote Transmitter

Solution

The magnetic flowmeter is one of the instrumentation devices used for a long time in plants. The magnetic flowmeter is a product that has no mechanical moving parts and is easy to maintain. It is difficult to recognize the abnormality of fluid until output abnormality occurs. AXG can continue providing stable flow measurement even if abnormal fluid condition occurs. In addition to this, AXG can detect abnormalities of the application. It contributes to stable plant operations.

Key Benefits

- The ADMAG has a unique flow tube and liner design supporting robust and aggressive processes, proving a longer life-cycle of the flowmeter. It uses an injected molded PFA liner with a welded retaining grid, that holds the liner position and prevents it from caving, due to vacuum conditions.
- AXG is the latest generation of ADMAG series which provides Dual Excitation System and adhesion level diagnosis. In addition, it offers in-line verification, and an optional microSD for off-line data analysis.
- AXG is the most suitable magnetic flowmeter for the severe applications like the flow with slurry or adhesive materials.



Overall, [ADMAG Total Insight Electromagnetic Flow Meters](#) are part of the Yokogawa Total Insight concept for optimizing operations and reducing maintenance costs through every phase of the product lifecycle. The ADMAG TI magnetic flow measurement series consists of the ADMAG AXG and the ADMAG AXW electromagnetic flow meters. For industries such as [Metal & Mining](#), [Pulp & Paper](#), and more, ADMAG TI series magnetic flow meters have digesters that are reinforced and protections to resist wear and deformation and extend service life, even under harsh high-pressure and high-temperature conditions.

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