



ADVANCED DIAGNOSTICS ON THE ROSEMOUNT 4051S PRESSURE TRANSMITTER

Make more confident decisions with more information at your fingertips.

More Insights From Your Process To The Control Room

The advanced diagnostics on the Rosemount™ 4051S Pressure Transmitter help you identify issues before they impact your operations or compromise the safety of your team. Diagnostic coverage includes process intelligence, plugged impulse line detection and continuous electrical loop monitoring with loop integrity.

All of the transmitter diagnostics are tracked in the built-in diagnostic log, which allows you to see the device status at all times and diagnose intermittent issues that might be occurring when you are not connected to the device. The transmitter also includes Safety Certified Diagnostics that improve compliance and reduce the risk of undetected failures in safety instrumented systems.

Loop Integrity

Electrical loops are frequently subjected to a variety of environmental and human stresses, such as corrosion, water in the housing, or an unstable power supply that can put the reliability of your 4 to 20 milliamp HART control loop at risk. This can result in the control system receiving incorrect measurements, potentially leading to safety and quality compromising decisions.

Loop integrity continuously monitors the health of the entire electrical loop to detect potential problems before they happen. You'll know when hidden electrical issues may be affecting the process reading, allowing you to take corrective action before operations or safety are compromised.



Fig. 1 Advanced diagnostics messages appear on the local display, the built-in diagnostic log and via notifications through an alert or alarm.

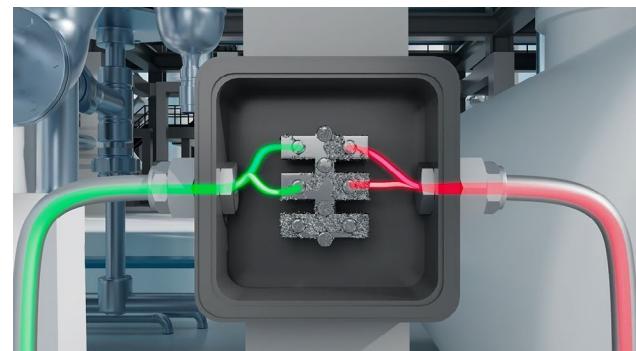


Fig. 2 A continuous check of the electrical loop ensures electrical loop integrity.

For more information, visit Emerson.com
or contact your local Emerson Sales Representative


EMERSON™

ADVANCED DIAGNOSTICS ON THE ROSEMOUNT 4051S PRESSURE TRANSMITTER

Plugged Impulse Line Detection

Impulse piping can be susceptible to plugging from material buildup or freezing, which isolates the transmitter from the process and therefore is unable to respond to process changes.

If the impulse line pressure gets trapped due to a plug, the transmitter will continue to provide an output, but the measurement will be inaccurate as the process flow rate changes. This misleading measurement may not be discovered for an extended period and may affect the quality of the product or compromise plant safety.

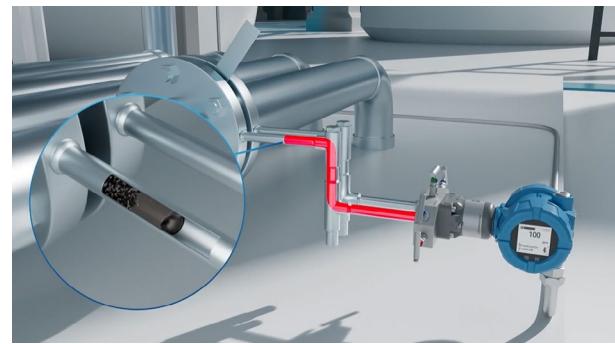


Fig. 3 The Rosemount 4051S Pressure Transmitter detects blockages in impulse lines, preventing inaccurate pressure readings

Process Intelligence

The process intelligence diagnostic detects changes in process noise levels to help you diagnose abnormal conditions like:

- Distillation column flooding
- Agitation loss
- Furnace flame instability
- Entrained air
- Process leaks
- Cavitation

For example, cavitation can erode pumps and valves leading to equipment failure and even costly process shutdowns. The Rosemount 4051S Pressure Transmitter uses statistical monitoring to continuously verify the status of process equipment eliminating the need to use more expensive traditional cavitation detection methods. Upon detecting an abnormal condition, you will be notified through an alert or alarm, on the local display and the built-in diagnostic log.

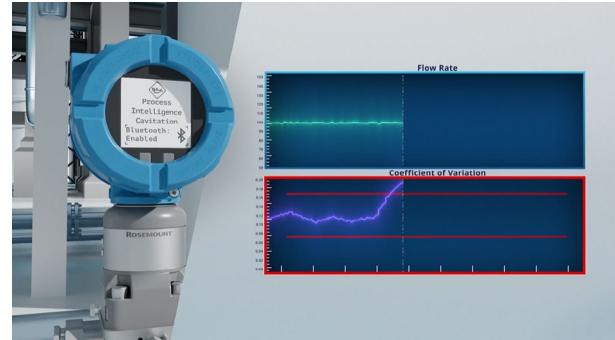


Fig. 4 When the set threshold is crossed, an error message will display on the transmitter.

For more information, visit

Emerson.com/Rosemount4051S

The Emerson logo is a trademark and service mark of Emerson Electric Co. Rosemount is a registered trademark of one of the Emerson family of companies. All other marks are the property of their respective owners. ©2025 Emerson Electric Co. All rights reserved.

00807-0300-6201 Rev AA

ROSEMOUNT™

 **EMERSON**™