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Emerson's update of the Rosemount™ 3051 Pressure Transmitter focuses on efficiency, safety, and the future

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The new frontier of innovation

New capabilities improve the Rosemount 3051 Pressure Transmitter user experience

It's not easy to follow a legend. In the sports world, players often feel the pressure (no pun intended) when they take the field, pitch or court immediately after a hall of famer. In entertainment, actors dread bad reviews when recreating famous roles. But sometimes a shadow cast by an icon can provide the extra incentive for the next person, or in this case, product, to be even more memorable.

Those who have worked in process automation know that the Rosemount™ 1151 Pressure Transmitter was something special. It was twice named to lists of the top 100 products made in America. It transformed what was then Rosemount Engineering Co., now Emerson, from an aerospace-specific supplier to an industrial automation company. You can even find the Rosemount 1151 Pressure Transmitter in the Smithsonian Institution.

So, the pressure was on when innovating beyond the capabilities of the Rosemount 1151, which transformed conventional pressure transmitters at the time. When it debuted in 1988, the Rosemount 3051 Pressure Transmitter was intended

to do the same for digital units, and the company has been on a 35-year march to consistently innovate the Rosemount 3051 Pressure Transmitter to stay ahead of fast-paced digital technology advancements.

“When we started developing the Rosemount 3051 Pressure Transmitter, we wanted to bring in a new era of instrumentation for our customers. That meant new sensing, new electronics, new transmitter design, new everything,” says Scott Nelson, Emerson’s vice president and general manager for Rosemount pressure products. “A lot of that thinking is what led to the Rosemount 3051’s success and the fact that it ended up unseating the super-successful Rosemount 1151.”

Rosemount 3051 Pressure Transmitters are now in their 36th year of production and Nelson has been around for all of it, having come onboard with Emerson around the same time as the Rosemount 3051 Pressure Transmitter was in development. While there have been many updates to the transmitter over those years, Emerson recently released its biggest update since the initial design. With

a focus on efficiency and safety, the latest advancements discussed in the following pages showcase how the updates bring the user experience into the modern age. With a dynamic graphical display, easily accessible data, Bluetooth® wireless technology, and extensive diagnostics capabilities, the updated Rosemount 3051 Pressure Transmitter caters to a younger generation of engineers—particularly mobile workers—but still maintains the same familiarity for existing users.

As Nelson points out, users still get the Rosemount 3051 Pressure Transmitter model they’ve always known, but the new capabilities offer much more to technicians in modern plants. The updated Rosemount 3051 Pressure Transmitter is like a new product that existing users already know how to use right out of the box.

Coplanar continuity

One thing that customers will find familiar is the coplanar design of the device. Emerson pioneered the Coplanar™ process connection with the Rosemount 3051, which features two process connections at the bottom of the pressure transmitter. Because it can be positioned on a single process flange, the mounting becomes lighter in weight than traditional biplanar styles that also limit flexibility.

“One objective [of coplanar design] was to achieve a higher level of performance and reliability,” Nelson says. “We are able to move the pressure sensor away from the process.”

The result is heat, vibration, and electrical noise, as well as other disturbances, can be isolated. It protects the transmitter from static



The Rosemount 3051 Pressure Transmitter has been a trusted instrument for some of the harshest process industries for more than three decades

pressure. But the most important element of the coplanar connections, Nelson adds, is that the configuration makes it possible for the Rosemount 3051 Pressure Transmitter to be a completely integrated application solution for an expanded market.

One reason the pressure market is such a large business is because pressure technology is versatile and can be deployed in many different applications. These days, it is vital that a pressure transmitter measure flow and level, and such versatility makes the Rosemount 3051 Pressure Transmitter a popular choice for applications ranging from chemical plants to oil refineries.

“Coplanar connections are an important driver for making the Rosemount 3051 Pressure Transmitter an efficient instrument capable of measuring a breadth of pressure, flow and level parameters through different configuration changes,” Nelson says.

Ushering in a new era

When Rosemount 3051 Pressure Transmitters were introduced, pressure transmitters were largely pneumatic devices. As Emerson set

out to usher in a new era of digital technology for pressure transmitters, the engineers knew it would have to be future-proofed. Nelson says that while Emerson invented the HART® protocol that became the industry standard for three decades, no one at the time envisioned the developments of FOUNDATION™ Fieldbus and PROFIBUS®, let alone local wireless communications such as WirelessHART or local Bluetooth technology.

The understanding that the Rosemount 3051 Pressure Transmitter had to be designed for an unknown future is one important aspect of the device’s longevity. The unit has not only thrived for 35 years, but also has been able to incorporate just about every technology turn that has taken place over that time.

“Its been able to incorporate the latest and greatest technology without obsoleting its installed base,” Nelson says.

The same applies to this year’s updates, the most advanced capabilities ever added to the Rosemount 3051 Pressure Transmitter. “Amazingly, those electronics and software capabilities that we’ve added weren’t even identified 20 years ago,” Nelson continues. “You can take those electronics off our production line today and go install them in a 1990s vintage 3051 and they will be fully functional.”

For Emerson, it was important that, even with such technological advancements, it maintained the familiarity of the units for its installed user base. The reason is simple. The ability to maintain the process interface—not only physically, but also mechanically and electronically—stems from the fact that the 3051 is used in some of the most challenging and demanding environments in the industrial sector. Changes can create safety and operational challenges, so Emerson wanted to keep the updates to existing applications seamless.

Many of those existing users have taken years to prove and accept the products they use in their processes. For that reason, Emerson kept the exact same footprint in the new Rosemount 3051 Pressure Transmitter, including the same materials of construction and model numbers.

So now users both existing and new are able to procure the latest and greatest technologies in a transmitter they already know and trust.

IT ALL STARTS WITH THE USER EXPERIENCE
Read how the updated Rosemount 3051 Pressure Transmitter makes
for a safer and more reliable process.



Transforming the user experience

The Rosemount 3051 Pressure Transmitter evolves with a focus on efficiency and ease of use

Industrial process operations are continually evolving, and for good reasons. These days, the goals are not only to get products to market, but also to get them there in the most efficient and safest manner possible. This is especially true in industries such as oil and gas, refining, energy transmission and chemical processing, where public and government scrutiny are abundant, dangers to workers are frequent, and cost efficiencies are paramount. So, it comes as no surprise that the venerable Rosemount™ 3051 Pressure Transmitter family has evolved with a focus on transforming the user experience to help users with each of those three core needs.

The most recent update to the Rosemount 3051 Pressure Transmitter is the biggest since its inception in 1988, and while the user experience has now been made more efficient and productive, the transmitters themselves remain as familiar and trustworthy as ever. Users already familiar with the Rosemount 3051 Pressure Transmitter won't be lost when they connect to the device

because Emerson has eased configuration, information gathering, and data analysis while transforming the user experience in many beneficial ways. Several improvements have been implemented to the Rosemount 3051 Pressure Transmitter that are designed to create a more efficient experience for technicians in the field while maintaining the familiarity of the product that many have grown to trust.

A better look at the graphical display

It all starts with how users can now interface with the pressure transmitters. Brad Burton, senior product manager at Emerson, says the improved graphical display is the improvement users will notice first. The Rosemount 3051 display now has backlighting for easy readability in all lighting conditions. It supports eight languages to make information gathering simpler across the globe.

In addition, Burton says the ability to display data in localized

languages increases clarity and responsiveness for many Rosemount 3051 Pressure Transmitter users. It eliminates the need for translation on the plant floor. "As you can imagine, translating anything across languages can be confusing. Giving users device reporting information in their local language is a big improvement for giving them the information that they need in a clear and understandable way."

He adds the display presents more information to the user at one time, while the percentage of range is always present, so the user has an indication of where they are on their output range. There's a large numeric representation of the dynamic process variable whether pressure, flow, totalized flow, level, volume, or module temperature. A clear indication of the unit of measure sits below that indicator and is easily visible. "We also indicate clearly which variable we're measuring," Burton says. "Our Rosemount 3051 measures pressure, but our users infer things like level and flow rate from that pressure measurement."



The graphical display now supports eight languages to make information gathering simpler across the globe

With that in mind, Emerson updated the pressure transmitter to make flow and level configurations easier, allowing users to see the dynamic variable that they're trying to measure on the display. For example, in the case of flow rate, they may want to see the units in GPM or SCFM. The same can be said for level, where the transmitter can support level measurement in a variety of level or volume units.

Simplifying configuration

The upgraded user interface simplifies configuration of the Rosemount 3051 Pressure Transmitter for flow and level applications. It only takes a couple clicks to easily configure the device to measure flow rate as well as track total flow. Level measurements are also simplified with the built-in configurator.

By providing installation and process details, the transmitter will automatically perform the necessary calculations to set the device up for level. All the user needs to provide is some DP level system installation information as well as key process details. Volume measurements are also possible for common tank styles or even customized tanks that require a strapping table.

The additional Quick Service Buttons also improve usability of the device. Following consultation with many long-time users of this iconic device, the company found being able to zero the device, re-range it, perform a loop test, view configuration, and orient the screen according to installation specifics was vital. For example, Burton says that if a technician sees a reading of a certain pressure and is concerned the device hasn't been zeroed properly and that



The Quick Service Button interface lets users configure the transmitter quickly and easily

the reading isn't correct, the technician doesn't need to call the control room to get access to the device through the asset management system or find their AMS Trex communicator to connect to the device to be able to access the configuration. They can simply push buttons on the transmitter that activate the menu so they can check the configuration of the device. They can also make sure that it's reading zero when the transmitter is vented or when the device is equalized between the high- and low-pressure sides.

Another area where the Rosemount 3051 has been improved is the ability to orient the unit as needed. The transmitter isn't always mounted vertically in the field, so using the added Quick Service Buttons users can rotate the display screen to be readable in different orientations.

Maintaining more traceability

In the age of the smartphone, it's no secret that users of any device have grown not only accustomed to, but also reliant upon the ability to access data and information at any given time. The Rosemount 3051 Pressure Transmitter is no different, particularly when it comes to maintenance tasks in the plant.

One of the major updates to the Rosemount 3051 transmitter family is its logs. It now offers more information stored directly within the transmitter. New diagnostic, calibration, and safety proof test logs can record and store multiple events to provide a better picture of device health and history. The diagnostic logs can track up to 100 events while calibration logs can track up to 20 events.

"From a traceability and maintenance standpoint, being able to reference when a unit was calibrated, how it was calibrated, and view the results of a given calibration is a big benefit," says Connor Oberle, product manager at Emerson.

The unit features a Guided Proof Test as well. A lot of Rosemount 3051 transmitters are used in SIS or safety installations. One of the requirements for an SIS installation is to do a proof test at regular intervals, such as every six months or every year. Proof tests verify that the device is still working properly and will respond when it's needed.

Depending on whether the user is doing a partial or comprehensive proof test, the device will drive the desired alarm settings and guide the calibration routine. With the proof test method that is built



The Rosemount 3051 now features two built-in process alerts, which are independent of each other and can be set on multiple variables at the same time

into the Rosemount 3051 Pressure Transmitter, the device walks users through the necessary steps to verify the alarm and perform any calibration verification.

"There are two keys that are the biggest value outside of the proof test steps themselves," Oberle says. "One thing they [technicians] might not know is what alarm value the transmitter is using."

That's because devices may have different alarm values because they can be user-defined, he adds. The Rosemount 3051 Pressure Transmitter automatically pulls the correct value in, so the user knows what to test the reference meter against.

Oberle says the log is the other big advancement because it easily stores all the results of the proof

tests. It even allows for customized notes to be included so that other users will know if it passed or failed and for what reasons. "

Track two alerts at once

Another upgrade to the unit is that it has expanded the functionality of the two built-in process alerts. The alerts are independent of each other so they can be set on

multiple values at the same time. They can track pressure, flow rate, flow totalizer, level, volume, and sensor temperature. They also can be communicated via HART® to any HART-compliant host or now, as an analog alarm.

"This is a big change from our legacy device in that the process alerts can drive analog output alarms," says Burton. "Typically, with a 4-20 mA device, the analog output is the key piece of information that they're relying on to be robust. If you configure your process alert to announce with an analog output alarm, now you're putting a lot of weight on that process alert."

The alert gives users the ability to tap into the information through the analog output channel rather than having to rely on interfacing it with a HART digital communication. "Some of our users are deeply rooted in 4-20 mA output, and they don't even have that access to HART information. Having the ability is a big change," Burton adds.

He also says that with two dynamic variables available, users can track pressure on one channel and flow rate on another, so they can have an alert that annunciates when the flow rate exceeds a certain value. "Having the flexibility to monitor two variables in the device and have them both independently configurable is a big value," Burton says.



The updated Rosemount 3051 Pressure Transmitter enables users in the plant to access vital information at any given time

BRING ON BLUETOOTH TECHNOLOGY

Not only has the Rosemount 3051 Pressure Transmitter been updated for efficiency, but also connectivity. The updated version is enabled with Bluetooth® technology, adding further efficiency and safety features for technicians in the plant.



8

Reasons to choose Rosemount™ 3051 Pressure Transmitters



1 transmitter for pressure, flow, and level applications



10X faster configuration with Bluetooth technology



30% larger, backlit, graphical display



Ready to communicate in **8** languages



24/7 monitoring of the electrical loop with Loop Integrity Diagnostics



0 process shutdowns with Plugged Impulse Line Diagnostics



6 dynamic variables monitored with **2** independent process alerts



5 key maintenance tasks with quick service buttons



EMERSON™

Bluetooth connectivity boosts safety, efficiency

The Rosemount 3051 Pressure Transmitter is now enabled with Bluetooth technology, and the connectivity adds several benefits for plant technicians

As the capabilities of the Rosemount™ 3051 Pressure Transmitter continue to evolve, its transformation is focused on creating more efficiency for users. Among the host of new features and updates is its connectivity. Understanding that in today's world people are used to wireless workflows on digital devices, it was a natural progression that the latest update incorporates Bluetooth® technology. The addition of Bluetooth technology offers several benefits for users, but as Megan Wiens, product manager at Emerson, says, Bluetooth technology builds on the idea that the iconic transmitter is becoming a more versatile device that is more aligned to the way people have become accustomed to connecting to digital devices in their daily lives.

While the Rosemount 3051 Pressure Transmitter has been one of the

most popular devices on the market for much of its three-plus decades of existence—Emerson has been voted *Control's* readers' choice awards best pressure transmitter for more than 30 years—connecting the transmitters to a field communicator had been a bit tedious. In the past, users may have needed to climb up on scaffolding, crawl behind instruments in crowded areas, or scale tanks to unscrew the cover of the transmitter just to wire up to the device. "It was a very manual process," Wiens says. "Now with Bluetooth capabilities, we've cut out all those steps."

Enabling Bluetooth technology, the popular short-length wireless technology used in many households and businesses today, technicians can simply pull out their mobile phones or tablets and connect with the transmitters without potentially exposing

the device to environmental hazards or human error, particularly if the cover doesn't get put back on quite correctly. "But you still get access to all of the information that's in the device," Wiens is quick to point out.

In one sense, Bluetooth technology is a service port to Rosemount 3051 Pressure Transmitters, much like other field communicators, but wireless and quicker for the user. Brad Burton, senior product manager at Emerson, explains that if users have a handheld communicator, such as a phone or tablet and have previously established connection to the devices with Bluetooth technology, they can simply walk through the facility with an app in hand and see certain information about the devices pop into their screen as they come into range. When the device pops into their app device



Rosemount Pressure Transmitters are now enabled with Bluetooth technology for easy and safe connections

list, they'll immediately be able to see the status of the transmitter as well as the dynamic process variable. He adds, such immediacy enables real-time status monitoring without going through the tedious, and sometimes dangerous, steps to access each transmitter. This level of information from multiple devices can be automatically monitored at the same time.

In addition, Bluetooth connectivity is about 10 times faster than the traditional HART® protocol. Wiens says the advantages to such speed are obvious on the surface. It lets users get work done faster. With traditional HART communicators, users might have to click a button and wait for a couple seconds until the next screen populates. "Bluetooth connectivity is much more responsive and more similar to a

phone, the interface that people are used to interacting with on a daily basis," she says.

Going a layer deeper, Wiens says the other benefit is technicians might not have to spend as much time in hazardous areas or even necessarily go into them at all if the communication range supports being able to stay outside of that hazardous area. "There's a broader benefit to this speed from a safety perspective," she continues.

Easy access

One valuable tool is the previously mentioned app, called AMS Device Configurator. It is a free download that gives users secure access to the transmitters. Transmitter information cannot be accessed via Bluetooth connection outside of the app.

When a user opens the app, the device list shows all the different devices that have been either connected previously or are within communication range of the user's phone or tablet. From there, the user can choose to connect to any of the specific devices. The device list also gives a quick overview of how everything's doing within range, and then offers the option to actively connect to a device.

Wiens says the Bluetooth interface that users see on the app when actively interfacing with the device is the same as people are used to seeing with other HART communicators such as AMS Trex and AMS Device Manager. "We've tried to reduce that learning curve with the way that we've designed the interface," she says. "It is a new technology, but users already know how to use it."

Staying safe

The technology updates to the Rosemount 3051 Pressure Transmitter have a focus on safety, as it is for any new capabilities added to Emerson devices. Providing users with a way to work more safely was a contributing factor to implementing Bluetooth technology. The company expects Bluetooth technology to be implemented across more of its products in the future with the safety of technicians, equipment and even the environment in mind.

In addition to minimizing time that technicians spend in hazardous locations, it eliminates several steps previously needed to access the device, from navigating hard-to-reach areas to the transmitter covers. Wiens says there's a lot of different safety aspects inherent to the addition of Bluetooth connectivity, including cutting down on time spent in bad weather or navigating congested areas at many facilities.

"Given the environment and just the nature of these facilities, it's about how we can help our users do their work more efficiently, reliably and safely," Wiens says. "Bluetooth technology is a good answer to all those different scenarios."

It's well known that undetected issues with a device could spark some type of environmental damage, particularly in processing industries such as oil and gas refining and chemical processing. In other cases, lack of detection can cause catastrophic breakdown. The monitoring capabilities of Bluetooth connectivity further enhances the ability of technicians to access alerts in a quick and timely manner.

Layering on security

The cybersecurity of Emerson's products is of utmost importance and Emerson worked hard to deliver secure solutions in the

design of the updated Rosemount 3051 Pressure Transmitter. Like all Emerson products enabled with Bluetooth technology, the transmitters have been developed with many security features to help ensure that users' facilities stay secure. Emerson's Bluetooth solution is secure out of the box. These security features are enabled by default and cannot be disabled, either inadvertently or intentionally.

When it comes to the Rosemount 3051 Pressure Transmitter, Wiens says a lot of the security measures are unseen by the user because they act "behind the scenes." But there are many visible signs of the added security layers. The first thing that many users see when they unbox a transmitter or an Emerson device with Bluetooth technology is each of the devices are shipped with a unique identifier (UID) and a key. The UID is a specific code associated only with that specific transmitter, which is used to identify that transmitter in the app.

In addition, the data presented on the app is encrypted. Wiens points out that the Bluetooth technology used is not the same as consumer Bluetooth wireless technologies. There are two different communication channels when talking about this Bluetooth technology, she says. The broadcast data is constantly being sent from the field device, and is encrypted for protection. That's the information being picked up when the user sees the device list in the app and includes very basic device information, like the tag, type of transmitter it is, or device health



The transmitters have been developed with many security features to help ensure that users' facilities stay secure.

status. This broadcast information is only visible from the app and after secure connection has been previously established. The other layer of communication is connection, which is when the user is actively communicating one-on-one with a Bluetooth device. "That is the layer that allows you access to the device," she points out.

Another security feature is admittedly very different than what users may be used to seeing with Bluetooth devices at home. Wiens says that rather than connecting the device in the plant like one would pair a Bluetooth speaker to a phone at home, which is a largely automatic task, the process for the Rosemount 3051 Pressure Transmitter is more like connecting to a Wi-Fi network. Users need to know what device they are looking for when choosing to connect to a device. They are asked to verify themselves with a specific password. From there, users can set up roles with custom passwords to satisfy preferred site cybersecurity practices.

"We've tried to make the different security features as flexible as possible to meet the wide variety of security preferences of users," she says.

Burton puts things in perspective relative to the launch of the Rosemount 3051 Pressure Transmitter in 1988 saying Bluetooth technology is a very recent innovation in comparison, and two things have inhibited Bluetooth technology historically when it comes to process control. One has been manufacturers' lack of ability to provide Bluetooth communication on a low-power device such as 4-20 mA transmitters that can run down to 40 milliwatts. "The lack of ability to have Bluetooth communication out of a device running on that minimal power was one issue," Burton says.

The other was being able to do it in a secure way. Even though the convenience of Bluetooth connectivity is fantastic, users simply cannot tolerate any security breaches that may occur that would allow somebody to manipulate the 4-20 mA output of a device and cause disruptions in a process.

Burton says that security of communications is a key concern for users due to the types of processes the Rosemount 3051 is used to control—understandably, some users are very conservative and very cautious about adopting new technologies. However, Emerson already has many users who have taken on adoption, according to Burton. "They see the advantages of the technology and are working to implement it into their work practices," he says. "So, there's a lot of excitement around it. It just has a modern feel of being able to pull out your phone and connect to a device." Emerson's implementation of Bluetooth connectivity provides the convenience of wireless configuration with the security you would expect from a global process instrumentation supplier.

With robust security features, a familiar user interface, and fast communication speed, Bluetooth technology is changing the ways users work and provides benefits for productivity, safety and reliability.



Rosemount 3051 Pressure Transmitter information can now be accessed using Bluetooth technology via the free downloadable app

DIGGING INTO DIAGNOSTICS

The Rosemount 3051 Pressure Transmitter has a broad range of diagnostic features that help to head off both instrumentation-related issues and broader process problems before they cause production interruptions.



Dynamic diagnostics on display

Continuous loop check capability and plugged line alerts lead the advanced diagnostics capabilities of the Rosemount 3051 Pressure Transmitter

Often, it's better to know what you're dealing with before it becomes a problem. Rosemount™ 3051 Pressure Transmitters feature an increasingly broad range of diagnostics designed to head off both instrumentation-related issues and broader process problems before they cause production interruptions. Loop integrity, plugged line alerts, onboard logs and other process alerts are among those diagnostic capabilities of the transmitters.

"There are a lot of diagnostics built into the latest devices and they are continuously running in the background, checking the transmitter's health and making sure that the electronics, the sensor module, and all of the integral parts are working properly," says Jacob Sharockman, product manager at Emerson.

While there is a plethora of diagnostics capabilities built into the Rosemount 3051 Pressure Transmitter—both previously existing and newly added—two of the

features that have received extensive updates are loop integrity and plugged line alerts.

Ensuring loop integrity

Electrical loops are frequently subjected to a variety of environmental and human stresses that can put the reliability of a 4-20 mA control loop at risk. The result is the control system receiving incorrect measurements, potentially leading to safety- and quality-compromising decisions. The loop integrity diagnostic in the Rosemount 3051 Pressure Transmitter monitors the electrical loop to detect issues that affect the communication signal and will alert users to issues such as corrosion, water in the housing, or an unstable power supply.

When the loop integrity diagnostic is enabled, the transmitter determines the baseline conditions of the electrical loop by capturing resistance and power supply values.

Using Ohm's Law, the transmitter develops a relationship between terminal voltage and output current. This relationship is based on the premise that, when a transmitter is installed, the electrical loop has a baseline characteristic that reflects proper installation, which allows the transmitter to monitor if loop characteristics degrade or change over time. Users can specify a preferred tolerance range for changes in the voltage. If the voltage range falls outside of the set window, the loop integrity alert will trigger and suggest potential sources causing deviations so they can be addressed. "They could be caused by issues like corroded wires or corroded terminals, or water in the housing," Sharockman says.

The most important aspect of the loop integrity diagnostic is the ability to assure users that the control system is getting the correct information. Sharockman says this diagnostic feature has resonated with Emerson's users. "A loop check is something that every user does when they install one of our pressure transmitters to make sure the transmitter milliamp output is being correctly seen in the



Loop integrity alerts have been updated in the latest transmitters

control system" he says. With the loop integrity diagnostic, the device will be able to notify you if anything changes in the loop over time that would affect the reading the control system is receiving just like if you were continuously performing a loop check over the life of the device.

Megan Wiens, product manager at Emerson, points out that the loop integrity diagnostic has been improved from previous Rosemount 3051 Pressure Transmitter models so that it is simple to set up. It only takes a few steps and a couple of seconds but provides significant peace of mind. It's also easier to interpret the information on the transmitters enhanced graphical display. With the new display, she says, users get a full description of the alert that is detected.

Keeping lines open

Another major update to the diagnostics capabilities of the Rosemount 3051 Pressure Transmitter is the plugged line diagnostic, which is focused on the transmitter's ability to read the process. In processing industries, impulse lines can be susceptible to plugging from material buildup or freezing, which isolates the transmitter from the process. Plugging may be difficult to detect because it may look like the measurement point is operating normally, but the transmitter is unable to see and therefore respond to process changes. The transmitter continuously monitors for plugged lines and alerts users to abnormal conditions that can lead to unsafe conditions or process quality issues.

The plugged line diagnostic tool can sense issues such as particulates



building up to cause a blockage in the impulse piping. When the plugged line diagnostic is enabled, the transmitter is continuously monitoring for issues in the background and will alert the user to a plugged line. It will alert the user via the enhanced graphical display, a HART® alert, or via the analog output to notify the user where it is most convenient for them.

To be able to see a plugged line alert directly on the display is an improvement that brings more clarity for the user. Wiens says it is a nice improvement that Emerson was able to make to the transmitters.

Sharockman adds that the ideas of loop integrity and plugged line alerts are aimed at giving operators and technicians the most accurate information to make the best decisions possible for their process operation. Wiens agrees saying, "The real value in both loop integrity and plugged line diagnostics are that the information provided by the transmitter is truly what is going on in your process, and that is important because some failure modes may still look like typical operation."

Logs and alerts

Emerson has expanded the logging capabilities on the Rosemount 3051 Pressure Transmitter quite significantly.

It has introduced a diagnostic log to the transmitter that can store up to 100 diagnostic events, including basic diagnostics and other diagnostics options beyond loop integrity or plugged lines.

"The diagnostic log can be a really helpful tool to use when troubleshooting the device, or just simply for maintenance purposes to understand what conditions your device has been in," Wiens says.

She says the device includes not only the diagnostics log, but also a calibration log. In addition, it features several process alerts, which have been expanded to offer new variables. For example, the Rosemount 3051 Pressure Transmitter can alert for pressure, module temperature and other process extremes. In addition to pressure and module temperature, flow, level, volume, or totalized flow process variables are now available for monitoring within the process alert.



Go Ingenuity. Go Boldly™

Emerson ensures the information you need is always at your fingertips. The newly redesigned Rosemount™ 3051 Pressure Transmitter delivers improved usability and more accessible data through application-specific configuration, advanced diagnostic capabilities, and Bluetooth® Connectivity.

Learn more at
www.Emerson.com/Rosemount3051

