

Valley Forge & Bolt Introduces the UHF Band RTM™ Meter for Wireless Monitoring of Tension in Critical Joints

Web-based clamp load sensor is IoT-compatible

Maintenance engineers in critical environments charged with condition monitoring have long wished the bolts themselves could start the conversation. Now they can. Valley Forge & Bolt has taken their SPC4® Load Indicating Technology to a new level with the latest addition to the company's RTM™ (Remote Tension Monitoring) series of meters—the UHF Band RTM Meter, a wireless bolt monitoring system. The UHF Band RTM Meter operates in 433/868/915 MHz frequencies, which includes the industrial, scientific and medical (ISM) frequency.

This wireless sensor detects and collects the tension level in a bolted joint as read by the company's SPC4® fastener, and then relays the data to a facility's condition monitoring/SCADA system. Users can also program the sensor to take measurements at prescribed intervals and send alerts if a bolted joint falls out of chosen tension parameters.



There are several scenarios in which the UHF Band RTM™ Meter's capabilities will pay dividends for users, but the first is the meter facilitates close monitoring of new fasteners during and immediately after install. The early hours after an initial tightening sequence can be critical to long-term performance because an unexpected loss of tension can affect bolt life.

“The facility manager can set the reading intervals for rapid readings, down to once every second, or for every 10 minutes. He or she can see immediately if a fastener is losing tension and correct it,” said James Brooks, Valley Forge & Bolt's head of engineering and business development. “Conversely, after enough time has passed and they are satisfied that the tension is holding, the manager can quickly and remotely adjust the reading intervals to be farther apart.”

In the long term, all bolts can be set to broadcast alerts when a chosen tension threshold is crossed.

“Select a tension percentage that is close to your application's danger or alert zone,” said Brooks. “If needed, a window with upper and lower tension percentage limits can be created. An alert can be sent as an email or as an audible alarm. The user has total flexibility.”

For the first time, the bolt is starting the conversation about whether it needs maintenance or inspection. Managers can also program alert windows during “interest” periods, such as times of suspected greater vibration in a process, to gauge how fasteners are reacting.

With a web-based user interface, users can change parameters for each wireless sensor remotely. “These features have never before been available in a bolting wireless product,” said Brooks. “The UHF Band RTM™ Meter is a game changer.”

In addition, the UHF band attribute will improve battery life and enable increased distance from the probe to the collection device. SPC4[®] fasteners make it possible to measure the actual tension from within a fastener, providing real-time knowledge of critical joint tension and performance from installation through fastener life. A variety of sensors and meters are available to read, display, and relay this tension information.

About Valley Forge & Bolt

Valley Forge & Bolt Mfg. Co. proudly produces innovative, industry-leading fasteners. From start to finish, no matter the bolting issue or the industry, the company's expertise and resources provide endless capabilities and immeasurable combined bolting experience. Their patented bolting products are widely trusted for their unrivaled quality, extraordinary performance, and enduring reliability. With the ability to produce both standard and custom fasteners to customer drawings and specifications, Valley Forge & Bolt is truly a custom bolt manufacturer, and has been doing it proudly for 45 years. Valley Forge & Bolt Mfg. Co., 4410 W. Jefferson Street, Phoenix, AZ 85043. Call: 1 (800) 832-6587. On the web: <https://www.vfbolts.com/>.