



Proficiency Sensor Health 1.1 from GE Digital

Ensure clean sensor data to reduce risk and support your digital transformation

Automatically detect sensor data abnormalities and speed response

Bad sensor data can mean lost product, downtime, compliance issues, and safety risks as well as a dirty data foundation for your digital transformation and continuous improvement programs.

Over time, sensors tend to deviate, impacting processes and operations. But, it's time consuming – and impossible for most organizations – to manually determine if and why sensors are working or failing ahead of increasing risk.

As an embedded smart app, Proficiency Sensor Health continuously monitors and analyzes sensor data, learning patterns and applying intelligence. You can target anomalies and quickly minimize their potential impact.

Proficiency Sensor Health provides an easy way to automate the detection of bad sensors and can generate alerts to speed repairs, replacements, and recalibrations. Furthermore, with Proficiency Sensor Health, you know that you are always leveraging the best possible sensor data as the basis for advanced downstream analytics and optimization.

Outcomes

- Increase product quality by continuously monitoring sensor health, using AI/ML to learn patterns and catch anomalies quickly
- Minimize downtime with preventive information – before disaster
- Reduce compliance and safety risks by ensuring that sensors monitoring processes and products are functioning properly
- Provide a clean data foundation for downstream analytics and IoT-fueled digital transformation and continuous improvement
- Trigger early warnings and alerts for faster response to reduce scrap, recalls, and costs
- Speed time-to-value with quick configuration and tight integration to GE Digital's software – simple set up that doesn't require a data scientist
- Common visualization – show sensor data quality in your HMI through Proficiency Sensor Health app

01 Decrease downtime by continuously monitoring sensor data

Sensors are often used to provide indications that equipment is running correctly, and incorrect readings can lead to equipment failure or damage. Early detection of a sensor that is no longer giving accurate or consistent results can provide advance warning that enables maintenance to replace or recalibrate the sensor before disaster happens.

02 Improve product quality

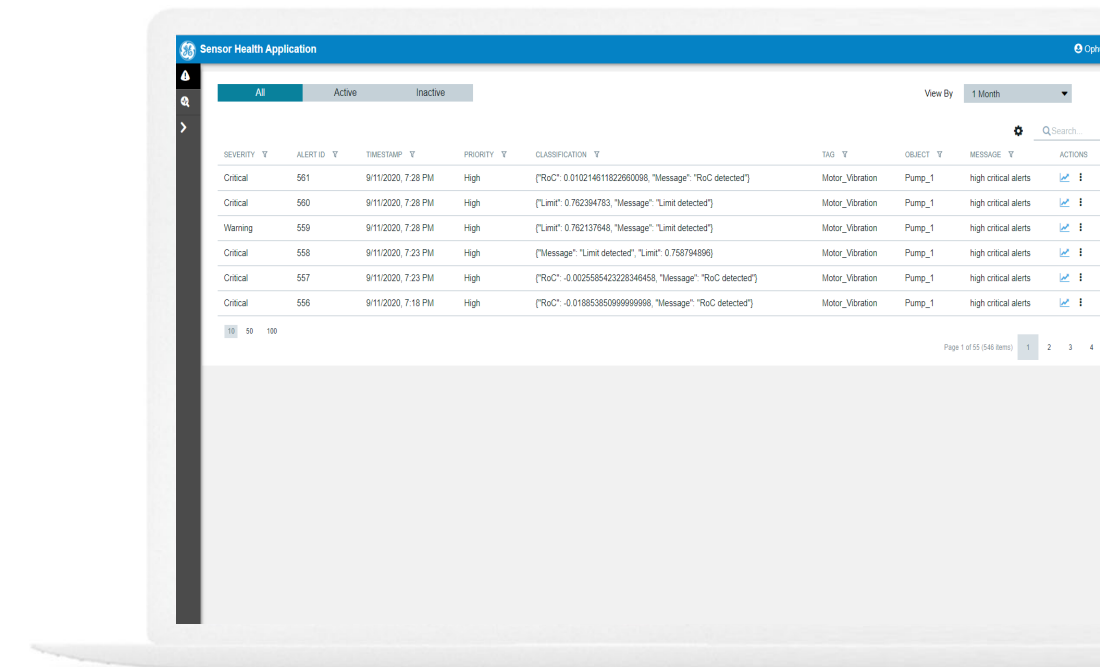
Sensors typically measure the results of a product or ensure that the ambient surroundings of a process are within specification. If the sensors used to measure the product or environment are not accurate or not functioning correctly, your products might be out of specification. With Proficiency Sensor Health, you can provide early warnings that reduce costs associated with product recalls or scrapped product.

03 Ease compliance and decrease risk

If a sensor is reading incorrectly, you might not be aware that potentially out-of-spec operations are putting you at risk of non-compliance. You can decrease risk by monitoring sensor data continuously to assess sensor performance and know that data is as accurate as possible. Compliance depends on all equipment and systems functioning properly, and you can boost your ability to meet internal and regulatory standards.

04 Ensure sensor data quality with AI/ML

You can improve your foundation for IoT-fueled analytics, digital transformation, and continuous improvement such as Lean by ensuring that your sensor data is clean. If your intent is more advanced use of analytics downstream, data quality is critical. Proficiency Sensor Health leverages data that is captured from sensors to automatically learn normal behavior, determine operating limits, and look for patterns that help identify issues with the actual sensor.



Proficiency Sensor Health can automatically learn normal behavior, determine operating limits, and look for patterns that help identify issues – before they become a problem.

05 Speed time to value with a packaged analytics app and superior UX

Proficiency Sensor Health is an easy-to-use app that does not require programming, IT, or data scientists. This smart app embeds within GE Digital's Proficiency Operations Hub, allowing mapping to model elements representing historical data tags for sensors. Teams can quickly see analysis and status with Proficiency Operation Hub's High Performance visualization and superior user experience. With information and alerts at a glance, you can respond faster to faulty sensors and deliver on outcomes.

According to research by IndustryWeek, 70% of industrial organizations are interested in analytics, greatly exceeding any other area of emerging technology. Improve the accuracy of your downstream analytics with Proficiency Sensor Health.



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Features

- Embedded intelligent app that continuously monitors and analyzes sensor data
- Generates alerts notifying staff for fast action
- AI/ML technology learns patterns based on past activity and applies intelligence
- Modern, easy-to-use configuration including messages and ability to select individual tags or by Object type in historian
- Alert application included with summary of detected sensor anomalies as well as the ability to filter and sort, drill into more detail, and tell the system to ignore a detection. Feedback enables adaptive training
- Targeted anomalies include: quality of data (systematic errors, outliers/range limits, missing data, constant value, bias/offset, drift), random errors such as noise, inactivity such as stuck at zero or dead sensor, rate of changes (ROC)/frequency variations/oscillations, and resolution behavior
- Anomaly trend visualization: Trend View page where users can visualize anomalies with color coding for sensors already configured for sensor health. Hovering provides anomaly details, rank, and possible defects
- Configure running state in addition to sensor value non-continuous operations, enabling more accurate learning from historical data and reducing false alerts
- HTML5 for platform independence

Hardware Requirements

The following hardware requirements are not comprehensive. Please refer to the Getting Started Guide or GE Digital for complete requirements information related to your application.

Minimum Server Requirements:

- 4-core CPU
- 16GB RAM

Hardware and software requirements are representative and may vary by customer deployment. Please consult the product documentation for more details.

Software Requirements

Supported Operating Systems

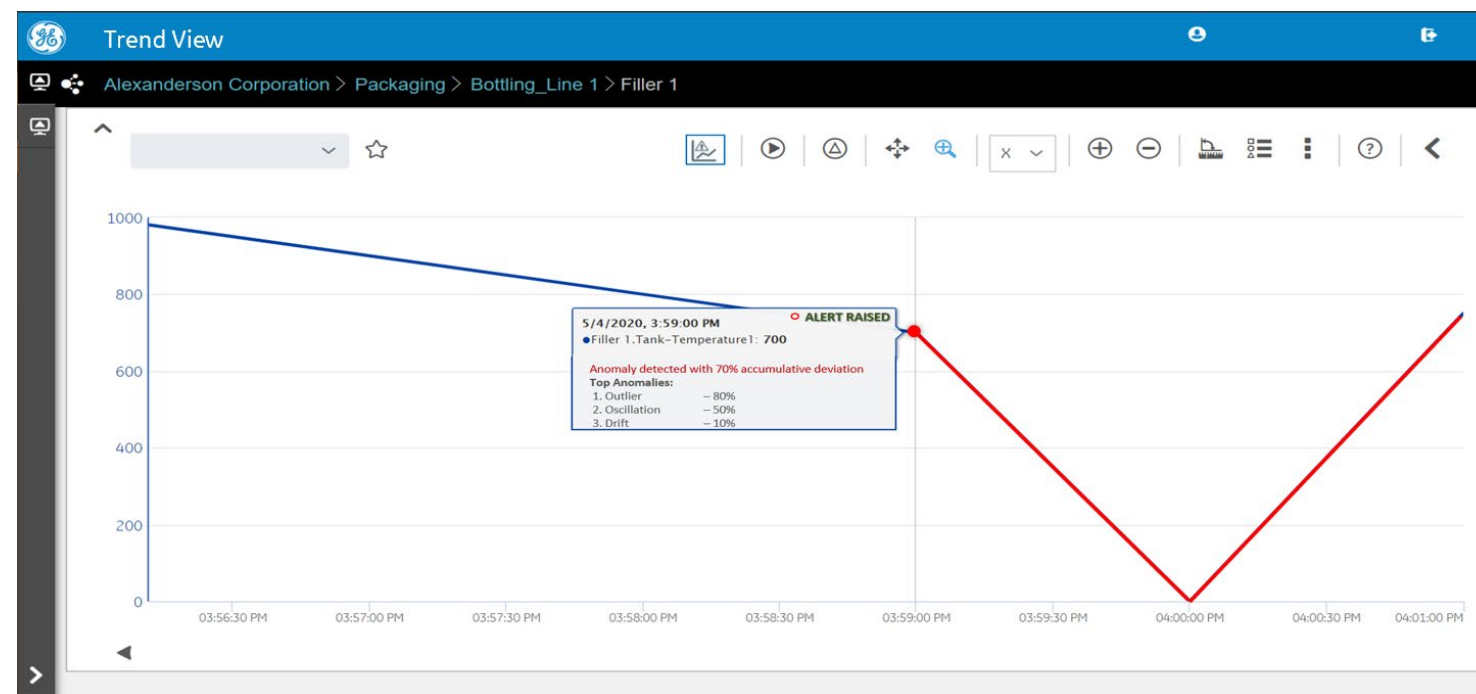
Servers:

- Microsoft Windows Server 2019
- Microsoft Windows Server 2016

Client Operating Systems:

- Microsoft Windows Server 2019
- Microsoft Windows Server 2016
- Microsoft Windows Server 2012
- Microsoft Windows 10 Pro
- Microsoft Windows 8.1 Pro

Data Management: Proficy Historian



Proficy Sensor Health provides an easy way to automate the detection of bad sensors and can generate alerts to speed repairs, replacements, and recalibrations.

Typical Applications

Data Quality for Operations

- SCADA Systems rely on data for control decisions and alerting. Downstream analytics rely on accurate sensor data

Machine OEM

- Value-add machines that leverage sensors

Product Quality

- Sensors used for measuring product quality

Critical operations

- Prevent unplanned shut down/stoppage due to abnormal conditions (ex. Cleanroom control)

Efficient operations, analysis, and analytics require good data – including functioning sensors. Automatically detect abnormalities & drive alerts with Proficy Sensor Health.

LEARN MORE



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Services

In the world of Industrial Internet of Things (IIoT), organizations are able to optimize productivity, reduce costs, and achieve Operational Excellence. While this is an exciting time for opportunity and growth, it can also bring on new challenges, questions, and uncertainty. No matter where you are on your IIoT journey, GE Digital has the right services offering for you.

Advisory Services We can help you plan and start your IIoT journey in a way that aligns to your specific business outcomes.

Managed Services We can help you maintain your critical machines from one of our remote locations around the world using model-based predictive analytic technology.

Implementation Services Our experienced global Automation partners can implement a collaborative, multi-generational program that marries your existing investments to the right enhancements and technology.

Education Services We specialize in education services to ensure that you're leveraging our solutions to the fullest extent with our training and certificate programs.

Acceleration Plans Let us help by ensuring that your business continues to operate at its highest efficiency, all while mitigating risks to your investments.

Related Products for Your Digital Transformation Journey

GE Digital's Proficiency suite helps you precisely monitor, control, and visualize every aspect of your operations, enabling operators to make the best decisions faster. Transforming your business requires foundational innovations that lay the groundwork for future success.



Proficiency Operations Hub

Aggregate and visualize contextual and situational information for industrial applications – supporting rapid application development and rich displays for faster operational response & better decision making



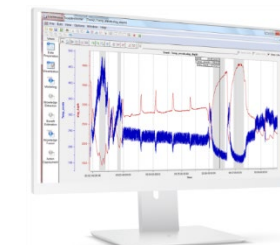
iFIX

Gain visibility into your operations and secure agility for smarter decision making that drives results with industry-leading HMI/SCADA used around the world.



CIMPLICITY

Drive real-time visibility for smart operators with true client-server based visualization and control with proven HMI/SCADA used by the largest industrial organizations



Proficiency CSense

Turn raw data into real-time value with a digital Process Twin and proven industrial analytics software



Proficiency Plant Applications

Maximize overall equipment effectiveness (OEE), improve production scheduling, and ensure product quality by leveraging real time production data



Proficiency Historian

Optimize asset and plant performance through time-series and A&E industrial data collection and aggregation. Improve decision-making with advanced trend analysis.

About GE

GE (NYSE: GE) is the world's Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive and predictive. GE is organized around a global exchange of knowledge, the "GE Store," through which each business shares and accesses the same technology, markets, structure and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology and scale, GE delivers better outcomes for customers by speaking the language of industry.

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