

LOCTITE[®] Pulse

LISTEN TO YOUR EQUIPMENT'S HEARTBEAT.

LOCTITE[®] Pulse Solution Brochure



SMARTEN UP YOUR MAINTENANCE:



Manage your equipment.

Gain transparency with an easy-to-use app.



Reduce maintenance efforts.

Reduce manual inspections and repair efforts.



Identify and solve problems.

Use data analysis to increase plant efficiency.



Scale with impact.

Scale across multiple assets easily.



Make your plant more sustainable.

Quick detection of asset failure allows for reduction of environmental footprint.



OUR SOLUTIONS.

LOCTITE Pulse is an Industrial Internet of Things (IoT) Solution designed to contribute to your plant's reliability. Once the LOCTITE Pulse sensors are installed on your critical equipment, they continuously capture data and provide valuable insights about its health status.

SMART FLANGE



SMART STEAM TRAP



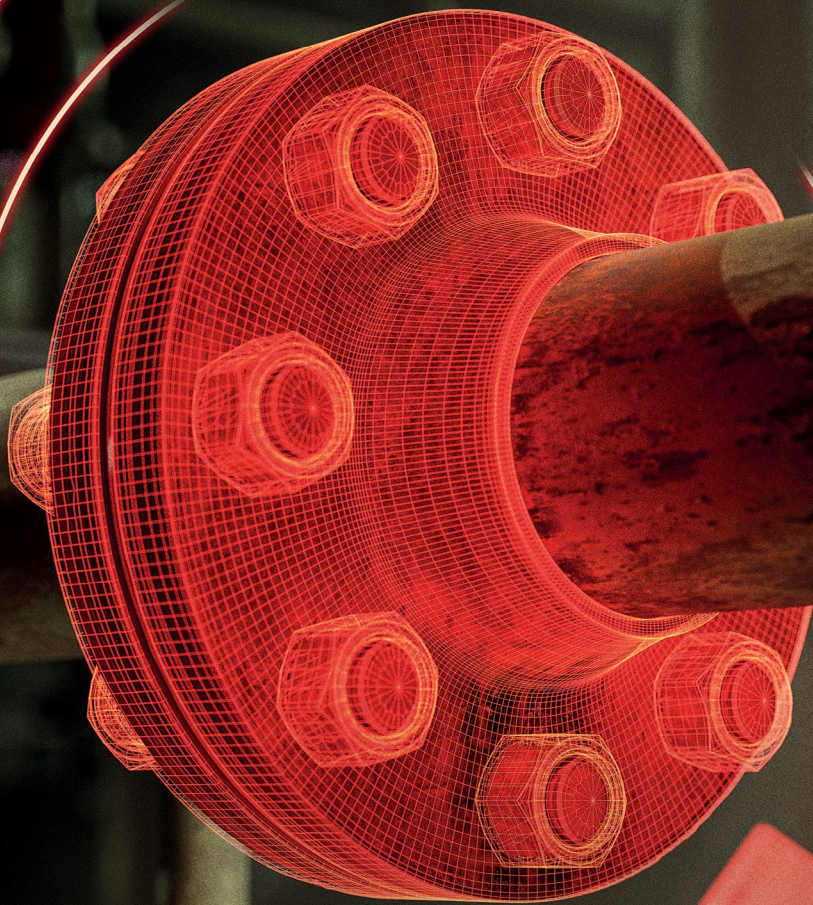
STAY TUNED.



Our vision is to offer you a holistic solution portfolio that allows you to keep an eye on your plant and make your maintenance routine more efficient. To this end, we look forward to introducing you to more smart solutions soon.

LOCTITE Pulse

SMART FLANGE



LOCTITE Pulse Smart Flange Leak Detection is an easy-to-use smart maintenance solution that can detect early leakages and may predict critical incidents. You can monitor critical assets in a web-based app and receive notifications when irregularities have been measured. This enables operators to react in a timely manner and decrease risks of growing leaks.

FLANGE LEAKS ARE A BIG PROBLEM.



- Nearly every plant in the process industry has thousands of flanges, many of which are highly critical.
- Especially critical flanges require regular inspection. This can be very time consuming due to insulation, cladding or difficult accessibility.
- Leakages can lead to serious consequences that affect the safety of the environment and the plant itself.
- Some flammable liquids can form explosive mixtures with air.
- Every hour that a leak goes unnoticed, environmental issues like water contamination and its consequences become more likely.
- Efforts required for repairing a leak increase over time, up to a point where a shutdown of the whole process may become necessary.

With the LOCTITE Pulse Smart Flange solution, you benefit from smart monitoring of your flanges that may reduce the risk of leakage escaping into the environment or other harmful consequences.

ALWAYS-ON MONITORING OF CRITICAL FLANGES AND TEMPORARY CONTAINMENT OF LEAKS.

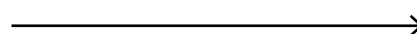
- **INNOVATIVE:** novel, patented carbon nanotube technology that supports quick detection of hydrocarbon leaks
- **PEACE OF MIND:** secondary containment can slow down the leakage and create time for planning the repair
- **ALWAYS-ON:** continuous reporting of equipment status – 24/7, 365 days a year
- **RELIABLE:** robust, consistent and hydrocarbon-specific signal generation
- **NON-INTRUSIVE:** retrofit installation during operations
- **EXTRA FLEXIBLE AND STRONG:** pick silicone or composite secondary containment for easy installation and removal or mechanical robustness



EASY INSTALLATION.

LOCTITE Pulse Smart Flange can be installed quickly, easily, and perhaps most importantly, non-intrusively – no shutdown required.

Watch the video to see how.



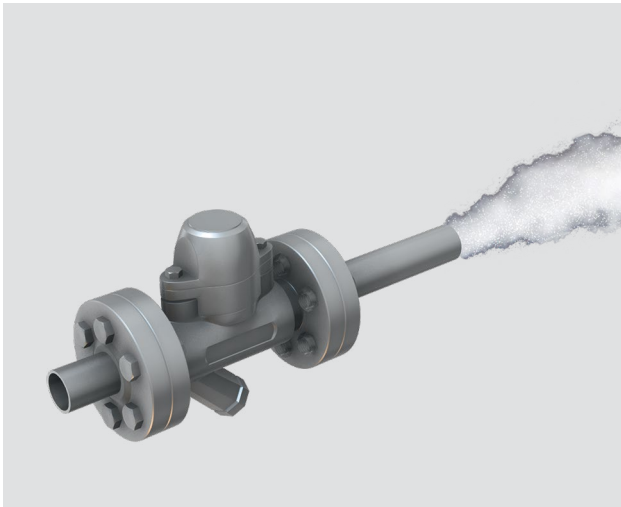


LOCTITE® Pulse

SMART STEAM TRAP

LOCTITE Pulse Smart Steam Trap is a smart maintenance solution that can detect asset failures to help reduce energy losses, minimize CO₂ emissions and increase product quality. In this way, it not only lowers costs but also increases sustainability. You can monitor critical assets in a web-based app, supporting your existing maintenance routines in order to increase plant safety, productivity and uptime.

THE IMPACT OF STEAM TRAP FAILURE IS HUGE.



- Almost every industrial plant has a large number of steam traps that can have a significant impact on the performance, resource consumption and sustainability of the plant.
- With lack of man power in maintenance and longer intervals between manual inspections, broken steam traps can go undetected for a long period of time and cause significant energy loss, increased fuel consumption as well as unnecessary CO₂ emissions.
- Increasing the number of manual inspections to regularly monitor hundreds and thousands of steam traps requires additional labor cost and expenses.
- Insufficient removal of condensate inside the steam trap significantly increases the risk of damages to the steam system, even causing long downtimes and affecting people's safety.

With LOCTITE Pulse, you benefit from smart monitoring of your steam traps and are enabled to reduce all of the above issues, thus allowing for efficient operations and contributing to potential cost reduction.

ALWAYS-ON MONITORING OF STEAM TRAPS CAN CREATE COST SAVINGS AND IMPROVE SUSTAINABILITY.

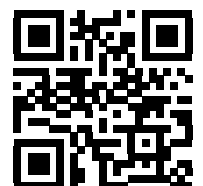
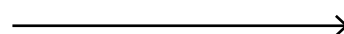
- **NON-INTRUSIVE:** retrofit, no shutdown required
- **QUICK AND EASY ROLLOUT:** start monitoring steam traps in a short time
- **ALWAYS-ON:** continuous reporting of failures – 24/7, 365 days a year
- **RELIABLE:** high failure detection probability
- **ALL-IN-ONE:** detection of all relevant steam trap failure types
- **INNOVATIVE SENSOR:** highly precise external strain sensor (optional) – printed, flexible, semi-conductive film



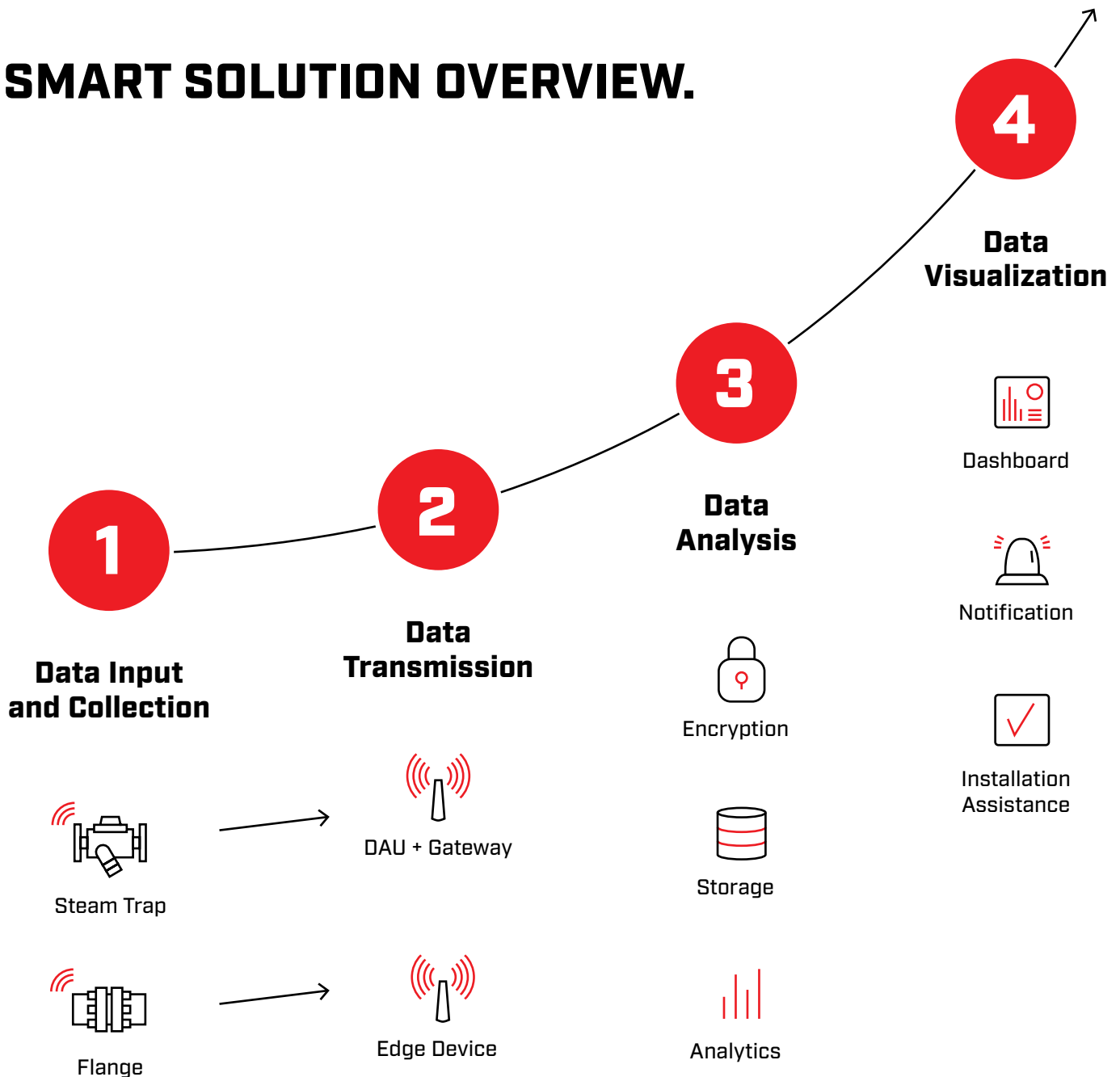
EASY INSTALLATION.

LOCTITE Pulse Smart Steam Trap can be installed quickly, easily, and perhaps most importantly, non-intrusively – no shutdown required.

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SMART SOLUTION OVERVIEW.



SECURITY IS THE TOP PRIORITY.

- Data captured at your critical asset is transmitted to the gateway, from where it is wirelessly transferred to the Loctite® Cloud.
- The data is stored and visualized in the Loctite® Cloud, which is based on Microsoft Azure and ensures applicability of the latest security measures.
- The whole solution can run fully independently of the site network, and thus provides your systems with additional protection against possible intruders.
- Sensor technology, data transmission and storage meet state-of-the-art safety standards.
- The device authentication mechanism and an access control concept ensure that only trusted devices and users can enter the solution network.

YOUR SMART SOLUTION.

LOCTITE Pulse Solutions come with a customized set of sensors, accessories and a subscription.



SENSOR PACKAGE

Customized to your requirements.

- Accessories and installation materials (adhesive products, secondary containments)
- Data acquisition unit⁽¹⁾



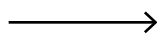
SUBSCRIPTION

Per asset and month or year.

- Smart monitoring and notification
- Gateway⁽¹⁾ or edge device⁽²⁾ for cloud communication and analytics
- Cloud analytics services
- LOCTITE Pulse app access
- Software support and service

BENEFITS OF IOT AS A SERVICE.

Conventional Ownership



Novel IoT “as a Service”

- High CAPEX
- Long payback period – slow ROI
- High internal skill requirements
- High internal efforts
- Cumbersome implementation
- Risk of outdated technology

- Low CAPEX
- Short payback period – fast ROI
- Low skill requirements
- Low internal efforts
- Easy and quick DIY implementation
- Up-to-date and latest technology accessible

OUR VISION: ONE HOLISTIC SOLUTION TO MONITOR ALL YOUR EQUIPMENT.

Asset Status Monitoring

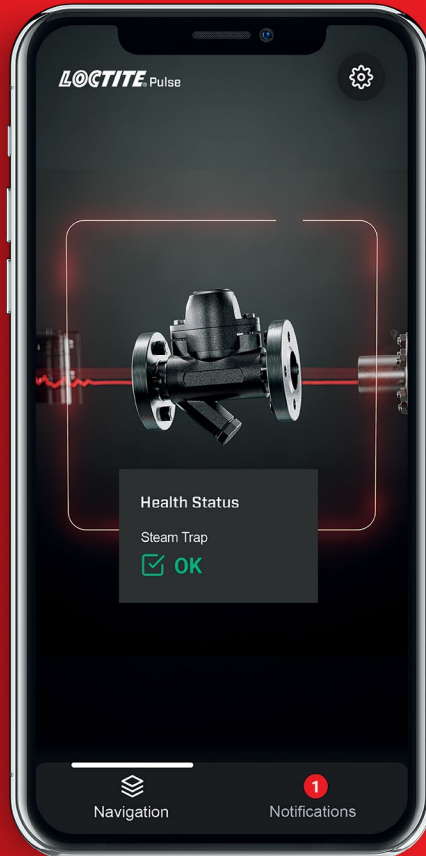
Always-on monitoring of your critical assets in a single Web-based app.

LOCTITE Pulse – The App

Keep up with your equipment's heartbeat. The Web-based LOCTITE Pulse app lets you monitor all your critical assets with a few clicks.

Sensor Data

Use sensors and data analytics to limit safety risks and increase plant efficiency.



Notification

Be informed of irregularities in your industrial assets.

Documentation

Document maintenance tasks or manually update asset conditions.

LOCTITE® Pulse

Scan the QR code to find out more.



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