THE *SMARTEST THING* YOU CAN DO IS *LISTEN.*

LOCTITE® Pulse Solutions Brochure

BEYOND THE BOND

LOCTITE® Pulse

BOOST YOUR MAINTENANCE PROCESSES:

MONITOR
Check in on your equipment 24/7 via your preferred digital device.

IMPROVE
Allow your equipment to live last longer, and reduce default risks and spare parts inventory.

PROTECT
Make your plant safer for your team and for the planet by limiting its environmental impact.

OPTIMISE
Generate data-driven insights that allow better decision-making and reduce stress levels.

PREDICT
Identify faults, anomalies and energy losses before they become functional failures.

PLAN
Schedule planned downtime and plan parts replacements well in advance.

RESOLVE
Tap into our adhesive heritage to find long-lasting fixes.

AS A RESULT: BOOST EFFICIENCY, CUT COSTS.
The ultimate outcome is a substantial time and cost advantage due to streamlined operations and increased productivity.

UNPARALLELED SIMPLICITY.

- **ONE PLATFORM:** bring high-end IIoT solutions and advanced AI algorithm capabilities together on a single platform – LOCTITE Pulse.

- **UNIVERSAL FIT:** monitor a wide range of critical static and rotating equipment.

- **ALL-IN-ONE APP:** equipment health status and notifications are centralised in an easy-to-use web-based app – that you can access anywhere, anytime.

- **EASY IMPLEMENTATION:** you decide which critical assets to monitor and to plug and play. No IT implications or hassle. It's as easy as that.

- **DECADES OF INDUSTRIAL MRO EXPERTISE:** leverage 70+ years of LOCTITE industrial expertise and repair solutions for efficient fixes and enhanced reliability.

LISTEN TO YOUR
EQUIPMENT'S HEARTBEAT.

LOCTITE Pulse, powered by 70+ years of industrial expertise, is redefining industrial reliability. From cutting-edge monitoring technology to expert repair solutions for both static and rotating equipment. Our Industrial Internet of Things solutions are designed to help you stay ahead of your plant failures, reduce downtime, and improve safety and sustainability.

STATIC

Smart
Flange

Smart
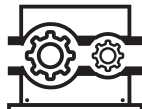Pipe & Tank

Smart
Steam Trap

ROTATING

Smart
Motor

Smart
Pump

Smart
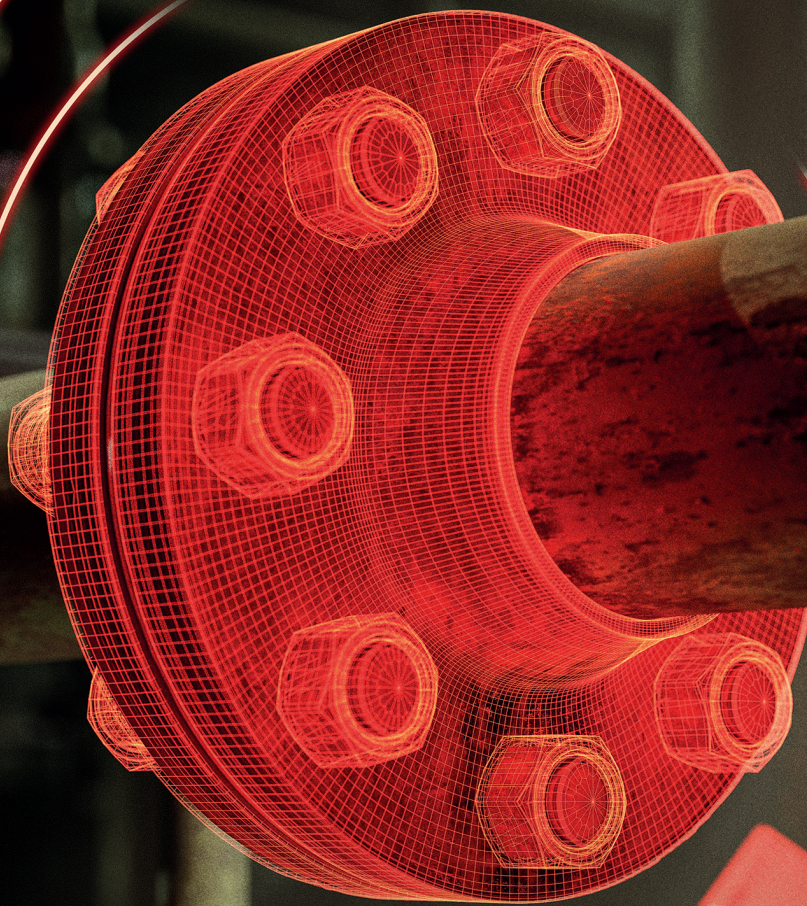Gear Box

Smart
Fan

Smart
Generator

Smart
Compressor

... and more

LOCTITE® Pulse

SMART
FLANGE

LOCTITE Pulse Smart Flange Leak Detection is an easy-to-use smart maintenance solution that can detect leakages early 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 the risk of leaks growing.

FLANGE LEAKS ARE A BIG PROBLEM.

- Nearly every plant in the processing 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
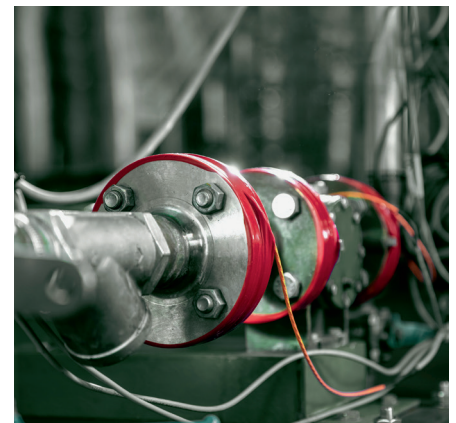
Scan the QR code and find more information:

LOCTITE® Pulse

SMART PIPE & SMART TANK

The LOCTITE Pulse Smart Pipes & Smart Tanks offer an advanced retrofit monitoring solution for early-stage hydrocarbon leak detection. Powered by carbon nanotube sensor technology, they predict critical incidents, minimize downtime, and boost sustainability, even in aging tanks and pipes.

PIPE AND TANK LEAKS POSE A MAJOR RISK, BOTH FOR YOUR BUSINESS AND FOR THE ENVIRONMENT.

- Leaks from damage, corrosion, and other factors can lead to significant harm, particularly in critical assets like pipes and tanks.

- Hydrocarbon liquid leaks, often underestimated, pose environmental risks such as water contamination and fire hazards.

- The challenge persists as possible leaks may remain undetected over extended periods, further compounded by the limitations of manual inspection methods.

With the LOCTITE Pulse Smart Pipe and Tank Leak Detection solution, you gain intelligent monitoring, minimizing leak risks and environmental hazards.

ALWAYS-ON MONITORING OF PIPES AND TANKS FOR 24/7 LEAK DETECTION.

- **NON-INTRUSIVE:** retrofit, no shutdown required

- **QUICK AND EASY ROLL-OUT:** start monitoring of pipes & tanks in a short time

- **ALWAYS-ON:** continuous reporting of failures – 24/7, 365 days a year

- **INNOVATIVE SENSOR:** advanced carbon nanotube technology to address critical liquid hydrocarbon leakage issues in industries like oil and gas petrochemicals

- **UNIVERSAL FIT:** versatile and applicable to most industrial pipe and tank configurations, even aging tanks & pipes

Scan the QR code and find more information:

LOCTITE® Pulse

SMART STEAM TRAP

> "We continuously get the information from the system. We can immediately react, and we do not have the losses of several months that cost us money."

Annegret Schindlmeyr,
Sustainability Manager, Henkel Consumer and
Industrial Adhesives Plant

LOCTITE Pulse Smart Steam Trap is a smart maintenance solution that can detect asset failures to help reduce energy losses, minimize CO_2 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 manpower 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, and well as unnecessary CO_2 emissions.

- Increasing the number of manual inspections to regularly monitor hundreds and thousands of steam traps requires additional labour 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 the smart monitoring of your steam traps and are abled to reduce all of the above issues, thus allowing for efficient operations and contributing to potential cost reduction.

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

- **NON-INTRUSIVE:** retrofit, no shutdown required

- **QUICK AND EASY ROLL-OUT:** start monitoring steam traps in a short time

- **ALWAYS-ON:** continuous reporting of failures – 24/7, 365 days a year

- **RELIABLE:** sophisticated AI algorithm supports high level of failure detection and lowers false alarm rate

- **ALL-IN-ONE:** detection of all relevant steam trap failure types

- **INNOVATIVE SENSOR:** highly precise external strain sensor (optional) – printed, flexible, semi-conductive film
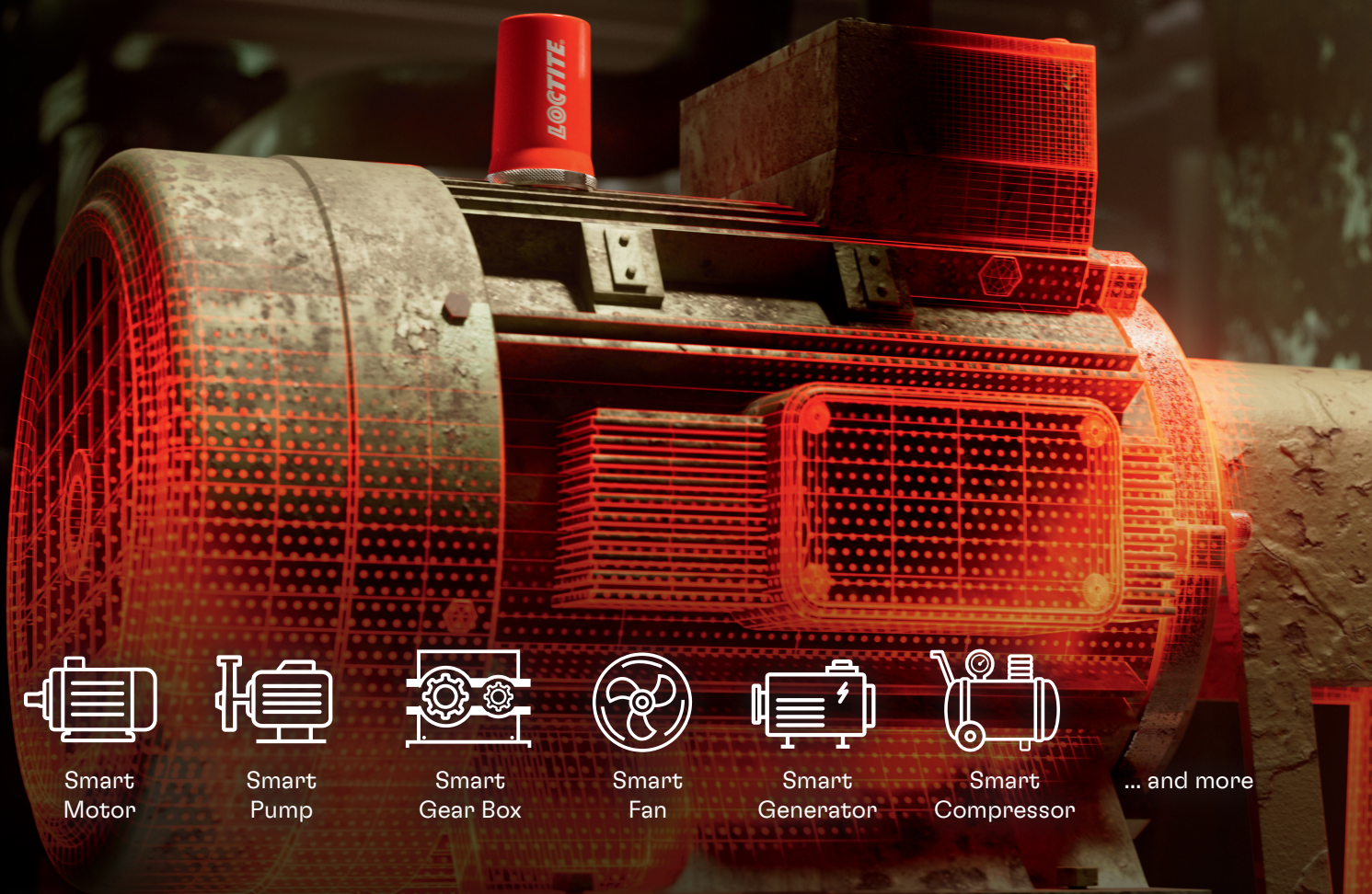

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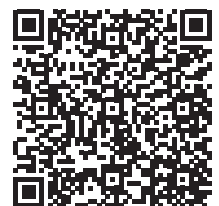
LOCTITE® Pulse

SMART ROTATING EQUIPMENT

| Smart Motor | Smart Pump | Smart Gear Box | Smart Fan | Smart Generator | Smart Compressor | ... and more |

With LOCTITE Pulse, you can remotely monitor your critical rotating equipment 24/7 to better predict failures and reduce unplanned downtime. All through an easy and intuitive plug & play IIoT solution that combines AI capabilities, 6-in-1 measuring components, and battery-powered flexibility and is approved for hazardous areas.

KNOWN CHALLENGES

Production losses caused by **unplanned downtime**

Shortage of **skilled trades** personnel

High costs of **emergency maintenance** & early **equipment replacement**

High **stress** level & **safety incidents**

Energy losses & ambitious **sustainability targets**

Insufficient reliable **asset information**

BENEFITS OF LOCTITE PULSE

Identification of faults before they become functional failures

Proactive downtime planning thanks to advance notification of potential failures

Improved equipment lifetime & reduction of spare parts inventory

Enhanced peace of mind & safety

Identification of causes of energy losses & improved sustainability metrics

Proactive data-driven decision-making

ALWAYS-ON MONITORING OF 6 PARAMETERS: HIGHEST PRECISION AND DETECTION RATE

3D VIBRATION
Get a reliable picture of the health status of your assets thanks to high-resolution triaxial vibration monitoring from 50 to 6,000 RPM.

ACOUSTIC EMISSIONS
If you can hear the problem, it's too late. That's why we monitor imperceptible acoustic emissions of the equipment.

TEMPERATURE
Know precisely your equipment's precise temperature, since an increase can mean something is not right.

MAGNETIC FLUX
Knowing your equipment's magnetic flux lets you assess its energy consumption.

TRUE RPM
More reliable analysis, even at varying speeds, thanks to true speed measurement.

HUMIDITY
Protect your equipment from rust and corrosion: monitor the humidity around it.
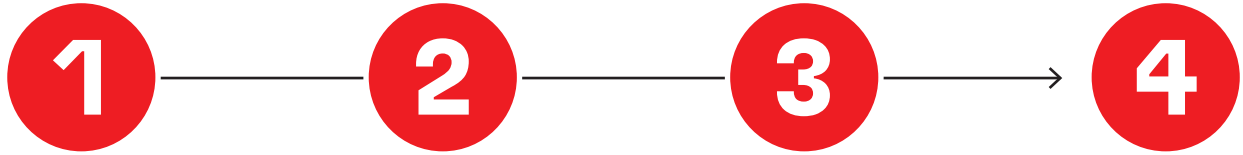
PLUG. PLAY. PEACE. NO EXTRA IT INFRASTRUCTURE, NO EXTRA EDGE BOX, NO WIRES, NO COMPLEX (IT) PROJECT.

- **QUICK & EASY:** easy installation, even for inexperienced personnel
- **NON-INTRUSIVE:** retrofit, no shutdown required
- **ALWAYS-ON:** 24/7, 365 days a year
- **EXPLOSION-PROOF:** explosion protection allows use in hazardous areas
- **COMPLIANCE:** outstanding compliance with common industry standards

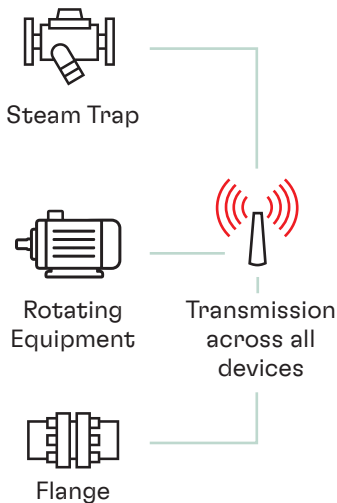- **HASSLE-FREE:** maintenance-free sensor with a service life of 3–8 years

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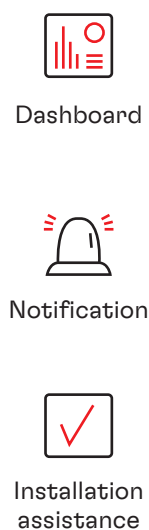
ONE *END-TO-END* SMART SOLUTION OVERVIEW.

1 → **2** → **3** → **4**

Data Collection & Transmissions | **Data Analysis** | **Data Visualisation** | **Repair**

Steam Trap

Rotating Equipment

Flange

Transmission across all devices

Encryption

Storage

Analytics

Dashboard

Notification

Installation assistance

Continuous monitoring

Proactive repair solutions

SECURITY TAKES 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 visualised 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.

- The 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 PACKAGE.

LOCTITE Pulse solutions come with a customised set of sensors, accessories, and a subscription.

SENSOR PACKAGE
Customizsed to your requirements.

- Accessories and installation

SUBSCRIPTION
Per asset and month or year.

- Smart monitoring

WE HELP YOU *FIND THE PROBLEM.* THEN WE HELP YOU FIND *THE SOLUTION.*

LOCTITE Pulse goes beyond predicting and identifying failures – it helps you find smart fixes, supporting smooth, long-lasting repairs. Repairs that can help reduce and eliminate the causes of chronic equipment failures, decrease repetitive maintenance activities, increase equipment uptime, and lower overall operating costs.

INNOVATION MEETS EXPERTISE:

TAP INTO OUR ADHESIVE HERITAGE FOR ENHANCED RELIABILITY AND PEACE OF MIND.

From cutting-edge monitoring technology to expert repair solutions, we keep your plant running smoothly.

LOCTITE 243 THREADLOCKER / SCHRAUBENSICHERUNG
FREINFILET NORMAL / SCHROEFBORGMIDDEL
Medium strength
ULTRA PERFORMANCE
50 ml / 53.8 g

LOCTITE 638 RETAINING COMPOUND
High strength · Hochfest · Fort · Hoge sterkte
55 g

LOCTITE 290 THREADLOCKER
WICKING GRADE · Medium Strength
PART NO. 29031
NET 1.69 FL. OZ. 50 ml

LOCTITE 518 FLANGE SEALANT / SELLADOR DE BRIDAS
Preferred red sealant for rigid metal flanges
PART / PARTE NO. 2096061

LOCTITE 402 INSTANT ADHESIVE
SOFORTKLEBSTOFF · ADHÉSIF INSTANTANÉ · SNELLIJM
ULTRA PERFORMANCE

BEYOND THE BOND

LOCTITE

OPTIMISE ASSEMBLIES AND ~~REDUCE UNPLANNED DOWNTIME~~ WITH LOCTITE.

REPAIR COMPOSITES

REDUCE COSTS AND EXTEND ASSET LIFETIME WITH REPAIR COMPOSITES.

A wide range of technologies suitable for addressing a broad spectrum of challenges.

GASKETING PRODUCTS

LIQUID GASKETS HOLD UP BETTER. FOR LONGER-LASTING SEALS.

Replace traditional gaskets and effectively seal flanges.

RETAINING COMPOUNDS

HIGH-LOAD, HIGH-STRENGTH PRODUCTS.

Increase the reliability of traditional bearing mounting methods with retaining adhesive.

THREADLOCKERS

TIGHTEN YOUR OPERATION. ELIMINATE LOOSENING.

Lock and seal your threaded assemblies, protecting against vibrational loosening, corrosion, and seizure.

... and more

Scan the QR code and find more information:

# ONE SOLUTION TO MONITOR ALL YOUR EQUIPMENT.

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 just a few clicks.

ASSET STATUS MONITORING

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

NOTIFICATION

Be informed of irregularities in your industrial assets

Health Status
Steam Trap
☑ OK

Navigation   Notifications
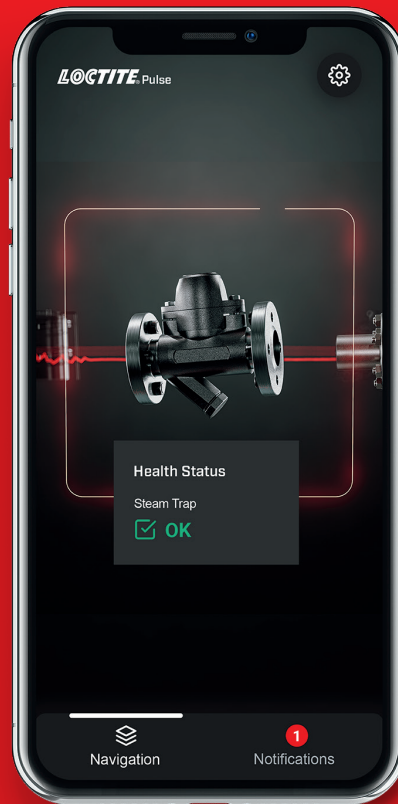
AWARD WINNER
DEA
ENGINEERING PRODUCT OF THE YEAR 2024

AWARD WINNER
BEMAS
DIGITAL INNOVATION AWARD 2023

" *Having a consolidated view of the CO$_2$ emissions and energy waste attributed to our assets in one place empowers me to identify and address the most crucial areas.* "

Camila,
Sustainability Manager

" *The user-friendly app, which is intuitive to use, promptly alerts me to any issues with my equipment. This allows me to swiftly pinpoint and address problems without being sidetracked by irrelevant information.* "

John,
Maintenance Technician

" *The app enables me to swiftly gain an overview of my assets. With alarm types and the predictive quantification of opportunity costs, it becomes effortless for me to prioritize maintenance tasks and schedule shutdowns.* "

Luke,
Reliability Manager

LOCTITE® Pulse

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Scan the QR code and request a consultation here: