LOCTITE® Pulse

PREDICT YOUR EQUIPMENT'S NEXT MOVE.

Even though your industrial equipment doesn't have a heart and soul, it still has a pulse. LOCTITE Pulse Smart Leak Detection is an easy-to-use smart maintenance solution that can detect leakages early on and predict critical incidents. This means less stress and more time for things that really require your expertise.

SMART FLANGE SOLUTIONS FOR ADDED VALUE.

The continuous monitoring of critical assets enables you to proactively react to leakages, potentially even before they escape into the environment.

Compared to a low frequency, manual inspection approach, the time until a leak is detected can decrease significantly – and with it, its average severity.

Increased Plant Safety.

An immediate reaction to a leak lowers the probability of accidents that cause damage to the plant itself or even maintenance personnel.

Reduced Unplanned Downtime.

An instant response to the leak lowers clean-up and repair efforts, saves man-hours, and reduces cost-intensive downtime.

Increased Transparency.

Digital documentation of the maintenance history of flanges and their leakage history provides additional transparency about maintenance quality. It also allows improved measures to be introduced to increase plant performance.

Increased Sustainability.

Repairing a leak quickly reduces the likelihood of environmental contamination and, subsequently, damage to your image.

Reduced Manual Inspection and Documentation of Critical Flanges.

Reduce manual inspections and repair efforts thanks to continuous monitoring.

LEAKAGES AND HOW TO DETECT THEM.

A refinery can emit about 600 tonnes* of Volatile Organic Compound per year from leaking equipment. Especially connectors like flanges are accountable for more than 30% of those emissions. Leakages lead to major safety risks, environmental damages, and costly downtimes.

LOCTITE Pulse Smart Flange is an innovative solution for detecting liquid hydrocarbon leaks in critical flanges. The Smart Flange solution is comprised of a sensor, a junction box, and an edge device. LOCTITE Pulse sensors utilise novel, patented carbon nanotube technology support detection of leaks before they escape into the environment. The retrofit sensor can be installed into the flange gap during operations. Two types of secondary containments hold the sensor in place and to help slow down leaks and allow time for reaction.

Sensor data is continuously acquired and analysed by the LOCTITE Pulse edge device. This edge device is maintenance-free and ATEX Protection. The edge device is battery-powered and thanks to its energy-efficient design, has a service life of up to five years. Cellular LTE communication provides reliable communication independent of corporate or local networks. End-to-end encryption ensures state-of-the-art data security. The LOCTITE Pulse online platform enables operators and maintenance staff to monitor the status of their assets 24/7 via a web-app.

LOCTITE Pulse – The Web-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.

Asset Status Monitoring

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

Notification

Receive notifications
when needed.

Sensor Data

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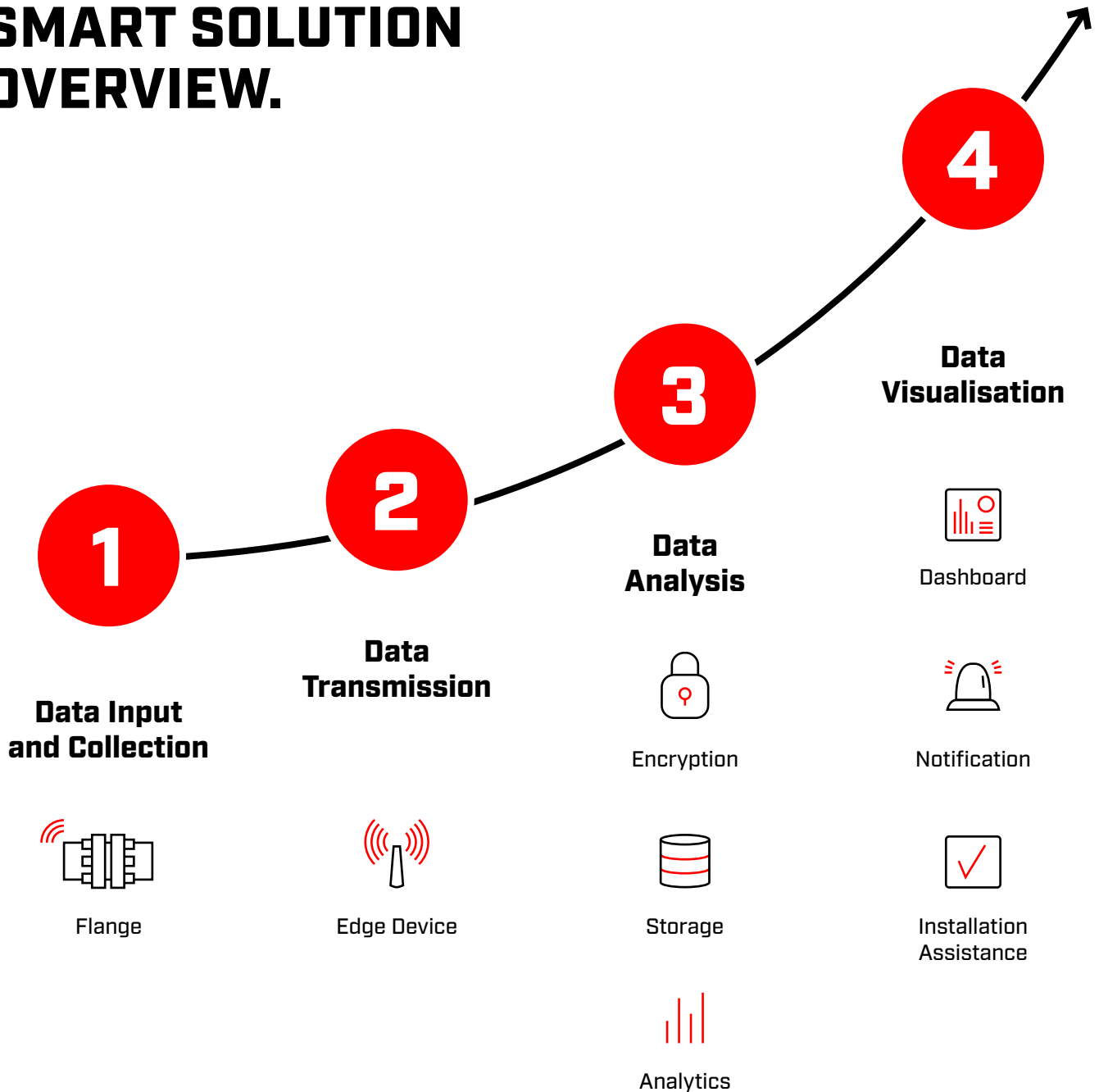to limit safety risks and increase
plant efficiency.

Documentation

Document maintenance tasks
or manually update
asset conditions.
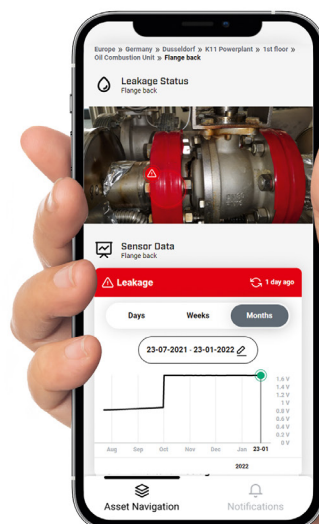
*Source is: US Environmental Protection Agency – Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, Nov 1995 - Leak Detection and Repair Compliance Assistance Guidance Best Practices Guide.

SMART SOLUTION OVERVIEW.

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Data Visualisation

Dashboard

Data Analysis

Encryption

Notification

Data Transmission

Data Input and Collection

Flange

Edge Device

Storage

Installation Assistance

Analytics

LOCTITE Pulse Cloud.

- The raw analog sensor data is processed by a local edge device that is not connected to the site network. This way, the edge device cannot serve as a point of entry for intruders.

- The data is stored and visualised in the Henkel cloud (based on Microsoft Azure).

- State-of-the-art security measures are in relation to the sensors and the data transmission protocols.

- The device authentication mechanism and an access control concept ensure that only trusted devices and users enter the solution network.

LOCTITE PULSE SMART LEAK DETECTION.
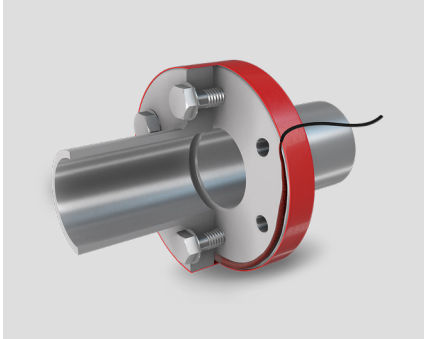
Always-on monitoring of critical flanges and temporary containment of leaks.

INNOVATIVE: Novel, patented carbon nanotube technology that supports quick detection of hydrocarbon leaks

PEACE OF MIND: Secondary containment can slow down the leakage and gives 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

SILICON SECONDARY CONTAINMENT: Fast installation and easy removal for maintenance

COMPOSITE SECONDARY CONTAINMENT: High material strength and mechanical robustness, also for large flange gaps

Data transmission and analysis.

SELF-SUFFICIENT: No local power supply needed thanks to battery power with a service life of up to 5 years

INDEPENDENT: Independent of local network thanks to cellular communication

ROBUST: Robust design for indoor and outdoor use

SAFE: ATEX Protection

Provision of information optimised for user needs.

INDEPENDENT: Web-based platform independent of end device or operating system

ONE-STOP SOURCE: All LOCTITE Pulse solutions are integrated into one system

ACCESSIBLE: Access the web-app and information from anywhere

USER-FRIENDLY: Simple and intuitive handling

YOUR SMART FLANGE SOLUTION.

The Smart Flange solution comes with a customised set of sensors, its accessories and a yearly subscription per flange. The Smart Flange solution comes with a customised set of sensors, its accessories and a yearly subscription per flange.

Sensor Package

Customised to your requirements.

- Leakage Sensors Accessories
- Secondary Containment Products

Subscription

Per flange and year.

- Leakage Monitoring and Notification
- Edge Device for Cloud Communication and Analytics
- Cloud Analytics Services
- LOCTITE Pulse Web-app Access

LOCTITE® Pulse

Get in touch for an offer.

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Scan the QR code to find out more or go to www.loctite-pulse.co.uk