

# STAPS Wireless steam trap monitoring

**STEAM & CONDENSATE  
MANAGEMENT SOLUTIONS**



*First for Steam Solutions*

EXPERTISE | SOLUTIONS | SUSTAINABILITY

**spirax  
sarco**

# STAPS

## Total acoustic performance solutions

The STAPS Wireless steam trap monitor from Spirax Sarco has been designed for easy, non-intrusive installation with accurate wireless monitoring and reporting to help improve your steam system performance.

### Hassle-free monitoring without cables

With energy targets set out by governments and authorities, as well as the pressing need to reduce costs, monitoring the performance of equipment in industry is more important than ever. The monitoring of steam trapping equipment has previously been a potentially time consuming and costly task, with productivity interrupted by the installation of power and data lines. These issues are eliminated with the new STAPS Wireless steam trap monitor. STAPS Wireless simply clamps on to a pipe, it requires no power cables or data lines. It is powered by a long life battery and transmits the data from the head unit back to the receiver, via a wireless signal, where the data can be fully interrogated using our purpose built software package.

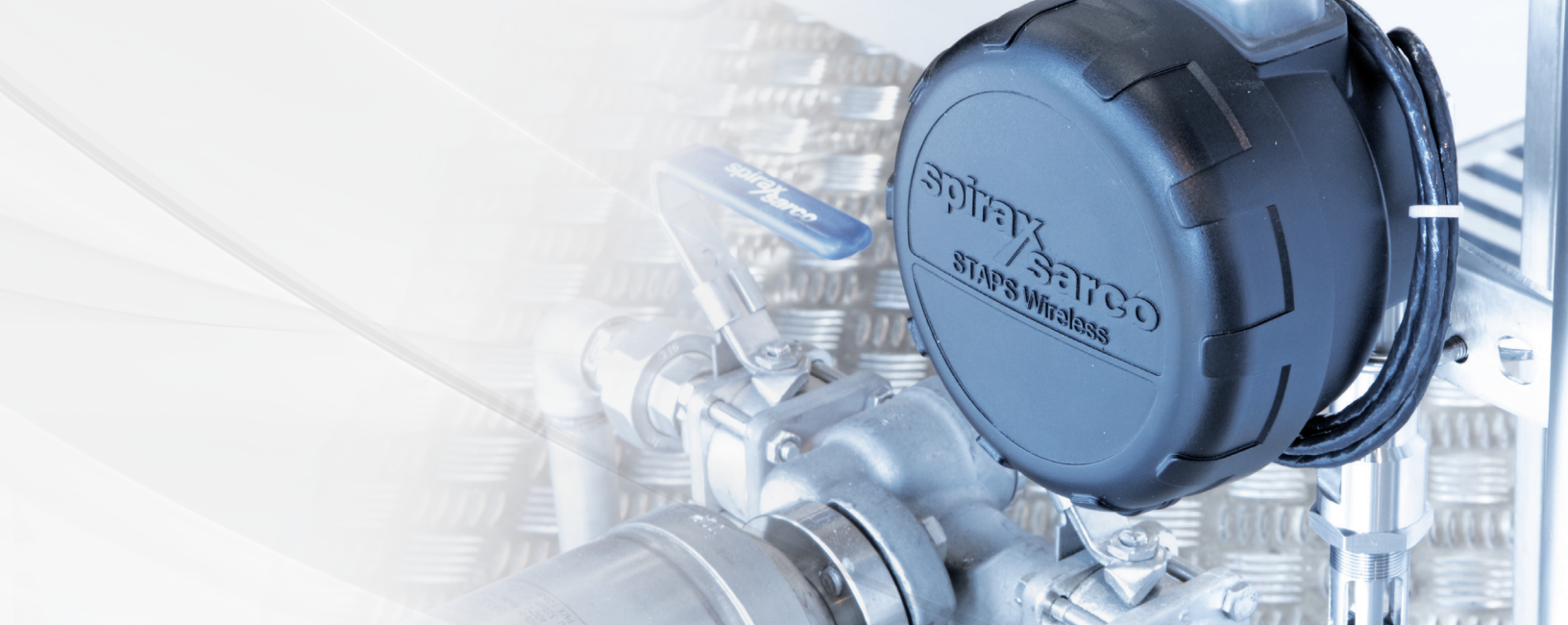
### Features and benefits:

- Reduces the need for on-going manual inspection, saving you time and money
- Significantly faster commissioning than a wired alternative for lower installation costs
- Clamp on design therefore no need to cut into the pipework
- Rapid leak detection
- Non-intrusive therefore it's easier to deploy almost anywhere
- Extends monitoring to remote and hard to access areas of the plant such as high level pipe racks
- Low maintenance solution, powered by long-life battery
- Low transmission signal strength ensures minimal risk of interference with other systems
- Suitable for use across a wide range of applications, can be used with pressures of up to 667 psig (46 bar g) and temperatures of up to 797°F (425°C)\*
- Uses universally accepted frequency of 2.4 GHz
- High accuracy algorithm created by Spirax Sarco that detects traps that are leaking or cold.

\*for non-explosive environments only



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## Why monitor your Steam Traps?

A healthy steam trap population allows condensate to be removed from the steam system effectively which means it can be re-used. We call this 'condensate recovery' and it saves money in a number of different ways:

### Reduced fuel costs

Normally, condensate will contain around 25% of the usable energy of the steam from which it came. Returning this to the boiler feedtank can save thousands of pounds per year in energy alone.

### Energy saving

Condensate returned to the feedtank reduces the need for boiler blowdown, which is used to reduce the concentration of dissolved solids in the boiler. This therefore reduces the energy lost from the boiler during the blowdown process.

### Reduced water charges

Condensate that is not returned and re-used must be replaced by fresh water.

### Reduced chemical treatment costs

Re-using as much condensate as possible minimises the need for costly chemicals to treat raw water.

### Reduced effluent costs

In many countries there are restrictions on releasing effluent at elevated temperatures so it must be cooled if discharged which incurs extra costs.

### Eliminated steam loss from traps

Leaking steam traps are ineffective, not only affecting the performance of your system but also leading to unnecessary costs through energy wastage. STAPS Wireless identifies these steam leaks, allowing you to take remedial action.



## STAPS Wireless monitoring will:

- Notify you of steam trap condition and approximate steam loss totals
- Assess trap performance at set intervals and report when a steam trap isn't working efficiently
- Identify steam leaks from traps which if left undetected, are a missed opportunity to save money and reduce environmental impact.

## Easy, non-intrusive installation at virtually any point in your steam system

STAPS Wireless is quick and easy to deploy as it is generally unnecessary to shut off the steam line in order to install it. Confined, remote or previously inaccessible locations are no longer an issue as the trap performance data is sent automatically to your PC, so no need to access awkward locations to retrieve data manually.

It's 100% non-intrusive and as the head unit requires no access to any electrical outlets or cables, it is quick and easy to install. The wireless network will be fully commissioned and configured by a Spirax Sarco engineer to ensure accuracy and give you peace of mind. STAPS Wireless delivers the essential information you need to make real-time decisions and take corrective action for saving energy and costs.

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## Complete and continuous visibility of steam trap performance

Even a programme of regular steam trap surveys, inspections and maintenance can be improved significantly by installing a STAPS Wireless system. Constant monitoring means that steam trap malfunctions or failures never go unnoticed, so your system is always as efficient and productive as possible. With user defined reporting intervals, you can set or adjust the system to generate updates as frequently as you require.

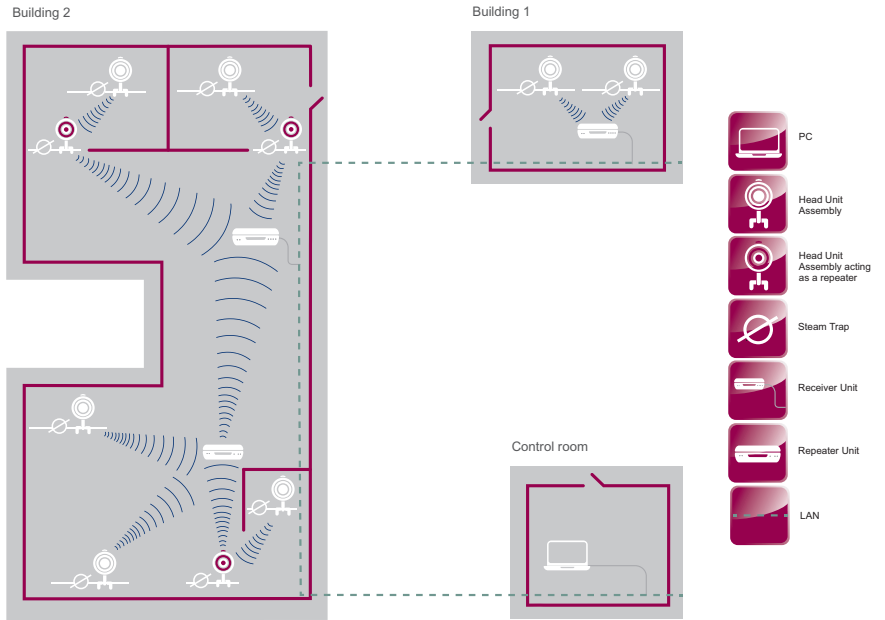
Monitoring your steam trap population with **STAPS Wireless** helps ensure the **maximum level of condensate is recovered**, and **minimum amount of steam is lost**.

# How STAPS Wireless works

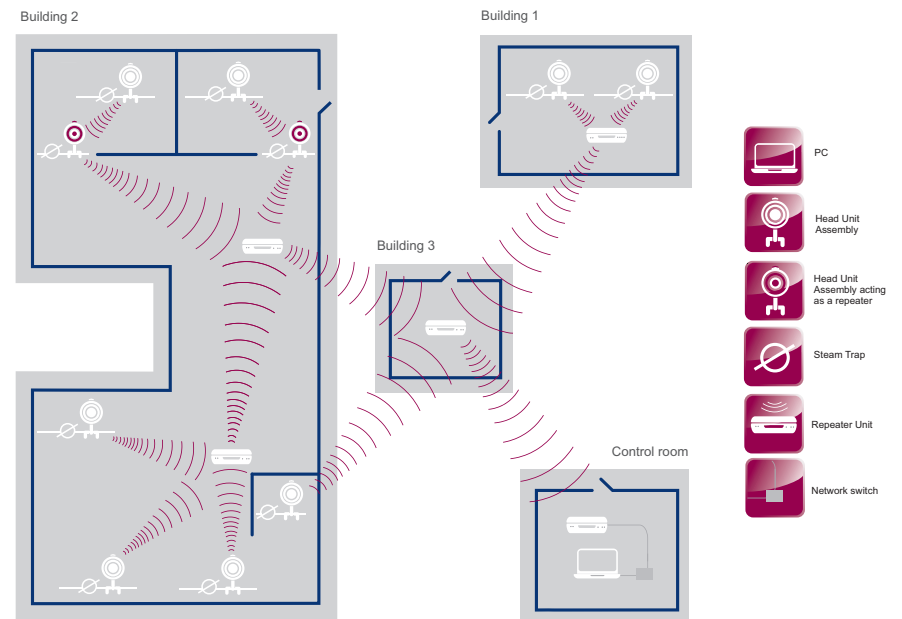
A head unit assembly mounted on the pipe upstream of the trap to be monitored 'listens' to the sound signature of the trap in operation. This sound signature is categorised and transmitted via 2.4 Ghz wireless network to a central PC. The PC determines the trap condition and calculates any steam loss.

Each STAPS head unit assembly is powered by a long life Lithium battery. It can communicate directly to a receiver that is connected to the PC software via a LAN connection or via another intelligent head or a head unit acting as a repeater. The PC software can be installed onto the site internal network, or onto a stand-alone local PC. The STAPS head, repeater and receiver create a network and can communicate with each other, passing on the steam trap data to the coordinating PC. The illustrations below and opposite show typical networks.

## Wireless architecture with access to customer LAN network



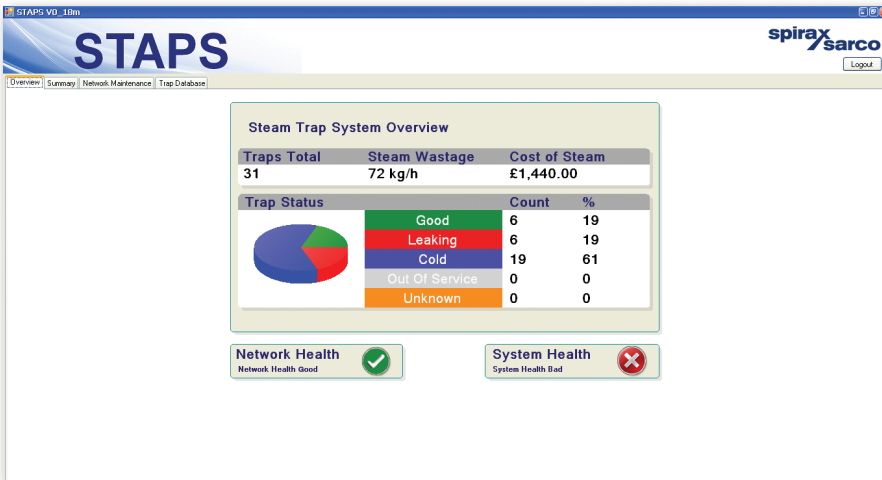
## Wireless architecture without access to customer LAN network



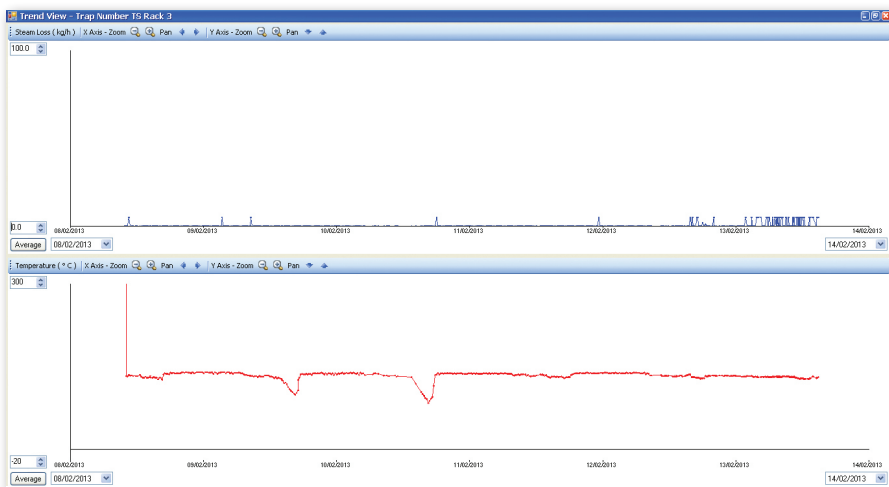
## Purpose built software

The STAPS Wireless system is supplied with purpose built STAPS software which has been developed to allow interrogation of incoming data. With performance monitoring you can easily access information about any steam wastage and the associated costs, as well as details of individual traps and their performance over a given period of time.


### Steam trap system performance



### Trend view of trap performance



## Certification and Approvals

- EMC Emissions and immunity:
  - EN 61326-2-1: 2006
  - EN 61326-2-3: 2006
- Emissions class B and Industrial immunity.
- Complies with FCC rules CFR 47 (1st October 2011).
- Safety to IEC / EN 61010-1 2001 (second edition).
- CSA 22.2
-  approved (contact us for more details)



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