



Condensate Contamination Detection

Save more condensate. Protect your steam assets. Cut costs

First for Steam Solutions

EXPERTISE | SOLUTIONS | SUSTAINABILITY

spirax
sarco

Condensate Contamination Detection

Early detection. Targeted insights. Total steam system protection.

Steam is the lifeblood of your process - but contaminated condensate can cause costly downtime, equipment damage, and wasted energy. Our Condensate Contamination

Detection (CCD) solutions give you the power to identify contamination at its source, protect your assets, and keep your steam system running at peak performance.

WHY IT MATTERS...

- ✓ Save valuable condensate
- ✓ Reduce energy and chemical treatment costs
- ✓ Prevent damage to steam plant equipment such as boilers and heat exchangers
- ✓ Boost system reliability and lifespan



CCD Protection Systems

Protect your system with proven, automatic response.

Our **CCD Protection System** acts as the last line of defence – detecting contamination at a single point in your condensate return line and automatically diverting contaminated condensate to drain or holding tank before it can harm your boiler.

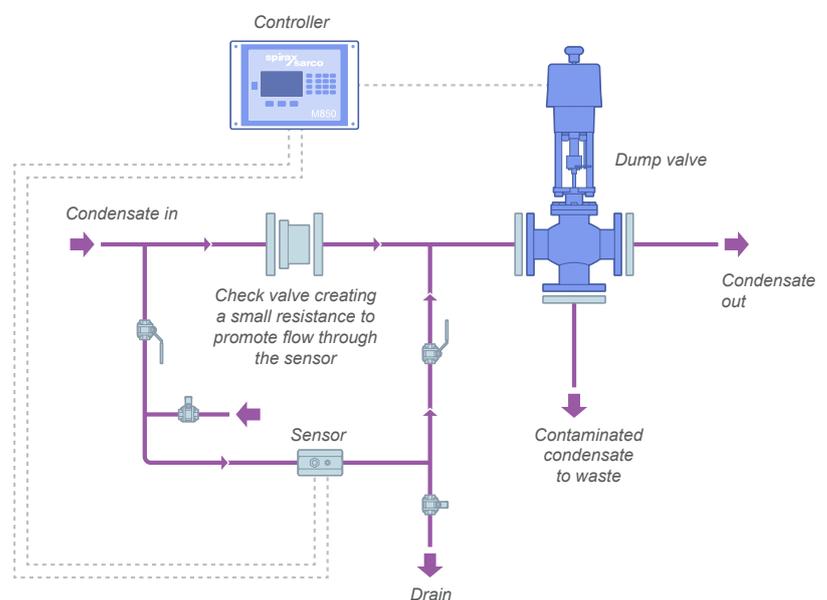
HOW IT WORKS...

SENSOR continuously measures condensate conductivity

CONTROLLER compares readings against pre-set thresholds

DIVERSION VALVE activates to remove contaminated condensate from the system

CHECK VALVE prevents backflow



BENEFITS



Automatic response
– no operator
intervention required



Improves compliance
with water quality
standards



Safeguards
boilers and reduces
repair costs



Protects entire steam system from a single monitoring point

Limitations of single-point detection:

While this protects the whole system, it can't pinpoint where contamination entered. This often means more downtime to locate the problem.

CCD Insights - The Next Generation

Move from reactive protection to proactive prevention.

CCD Insights is a surveillance system built on our proven protection technology. It is installed closer to the process to indicate the root cause of contamination.

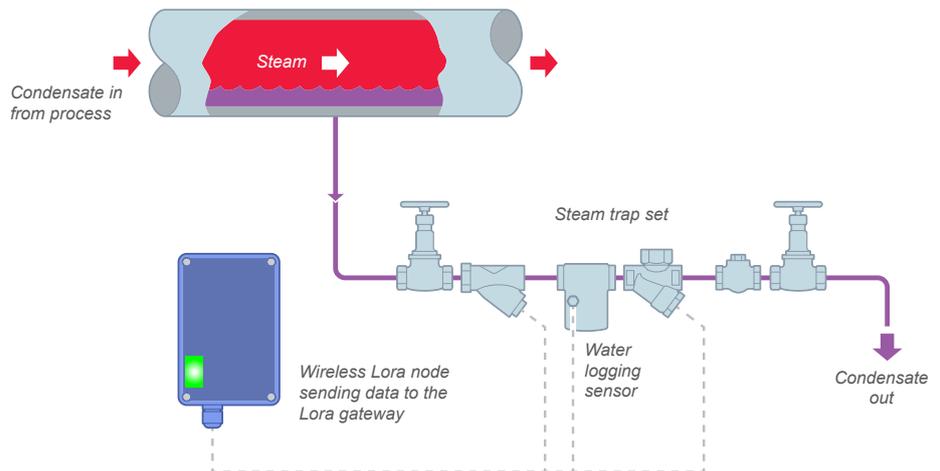
HOW IT WORKS...

1. WLS1 SENSOR – measures electrical conductivity and temperature in free flowing condensate (up to 200°C)

2. LORA NODE – battery-powered, sends data every 10 minutes via secure LoRaWAN

3. GATEWAY – uploads data to the cloud via 3G/4G

4. INSIGHT – data trends statistics and notifications.



KEY FEATURES



Installed closer to the contamination source to pinpoint root cause



Continuous conductivity and temperature monitoring



Historical data for trend analysis and predictive maintenance



Customisable thresholds with instant notifications



Secure data storage in Microsoft Azure

BENEFITS OVER TRADITIONAL SYSTEMS



Detect contamination sooner



Reduce unplanned downtime



Lower energy, water, and chemical costs



Identify *which* asset is failing (e.g., leaking heat exchanger)

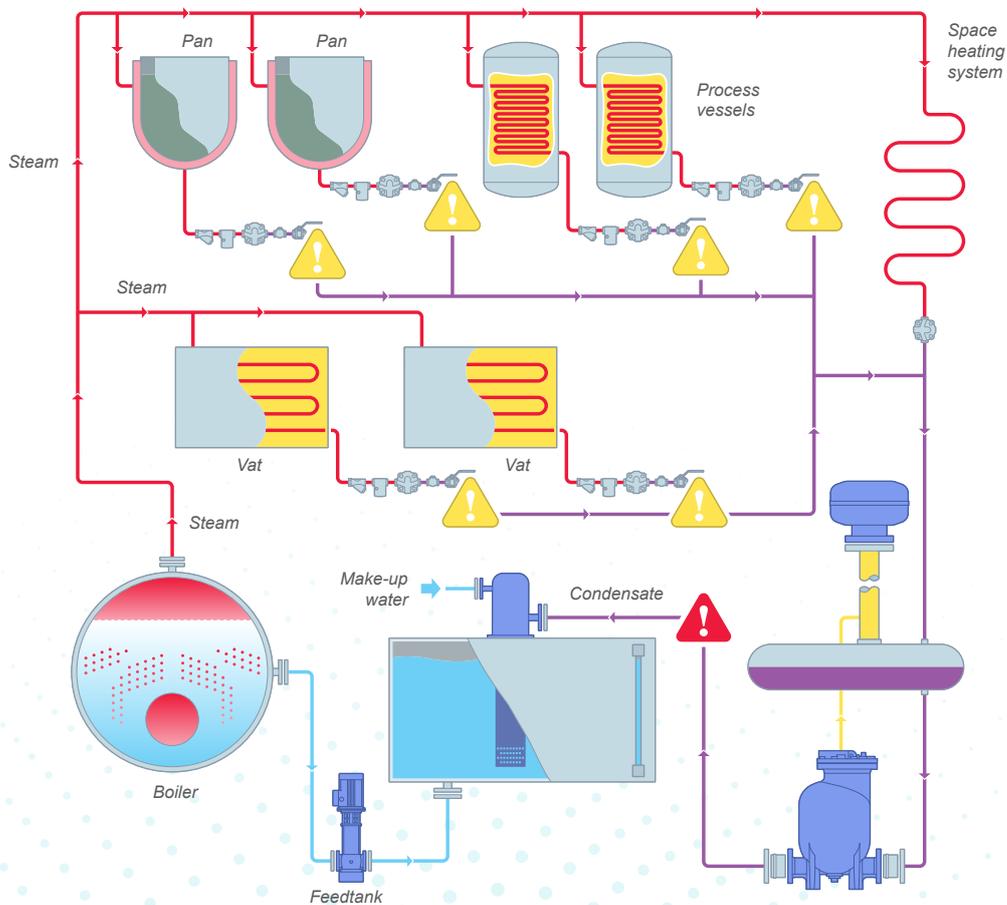


Preserve more usable condensate for return into the boiler



CCD Insights

A complete solution for steam systems. Protection and surveillance systems are designed to compliment each other.



Protection system



Surveillance system

CASE STUDY – Brewery Application

A major brewery experienced repeated shutdowns due to cleaning chemicals entering the condensate. With a single-point system, the root cause remained unknown for days, costing production time and money.

With CCD Insights:

- Multiple sensors installed near process heat exchangers
- Source of contamination identified within hours
- Only affected line isolated and repaired
- Condensate preservation improved by 15%
- Significant savings on energy and chemical costs

Losing just 10% to contamination can cost thousands annually in energy, chemicals, and water treatment.

CCD Insights helps recover that loss.

CASE STUDY – Cereal Partners

Enhanced Condensate Monitoring & Efficiency Savings.

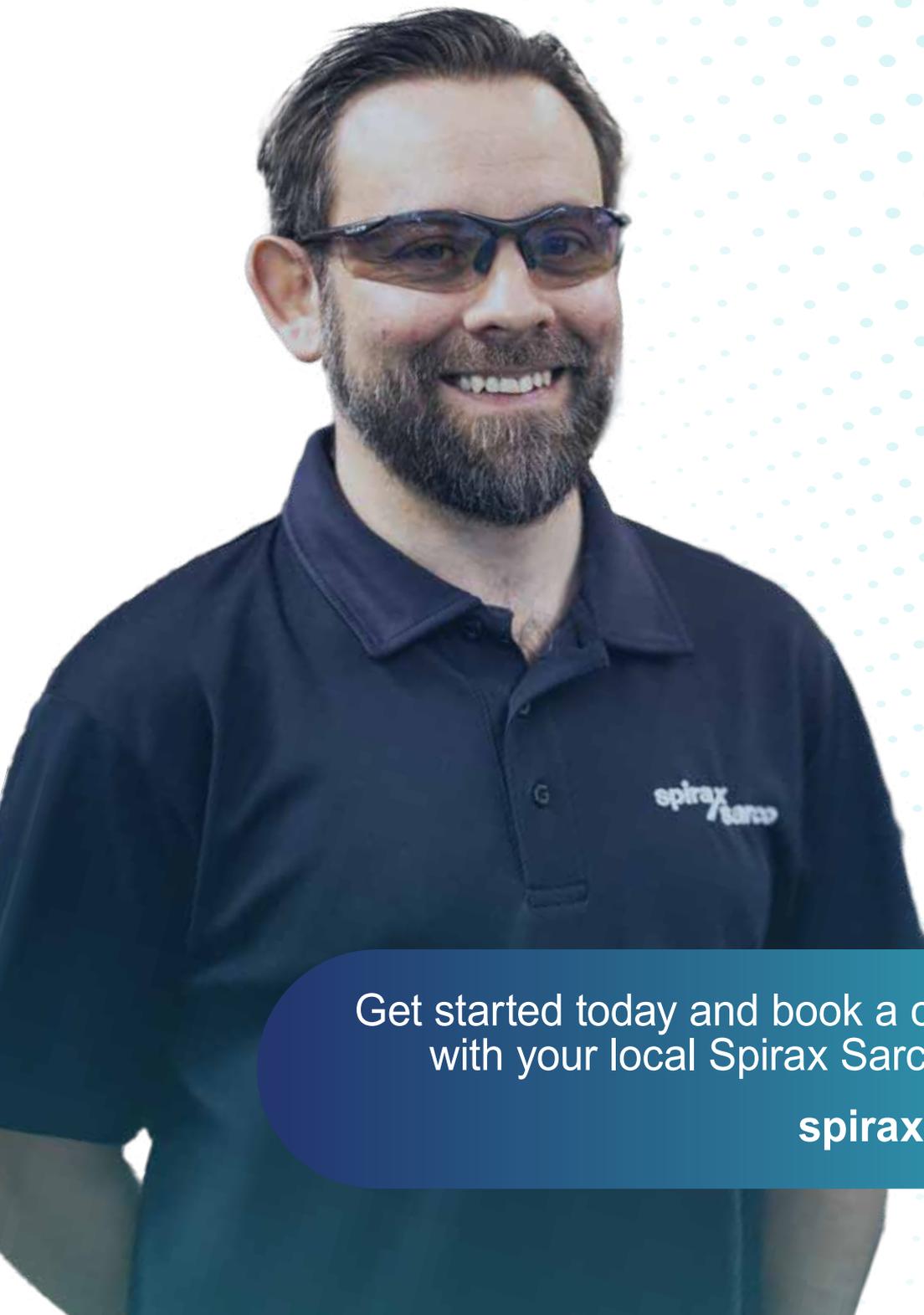
Previously, site operators needed 2–3 hours to manually test the system and trace faults. With Spirax Sarco's digital controls:

- Full site review now takes just 10 minutes
- System faults can be diagnosed remotely
- Heat exchanger issues can be pinpointed and acted upon quickly
- Data snapshots can be shared and discussed in real time

"I can now diagnose and fault-find without even leaving my chair. This saves us an inordinate amount of time."

Your trusted partner in steam system performance.

Spirax Sarco has decades of experience delivering steam solutions across industries - from food & beverage to pharmaceuticals. With CCD, you're backed by proven technology, expert support, and a partner committed to your operational excellence.



Get started today and book a consultation with your local Spirax Sarco engineer.

[spiraxsarco.com](https://www.spiraxsarco.com)



We deliver **global solutions** and **local expertise** through our network of operating companies, manufacturing sites, sales offices and distributors **worldwide**.

Discover how we can help you optimise your system and achieve your goals at spiraxsarco.com.

Driven by data, delivered by experts.

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