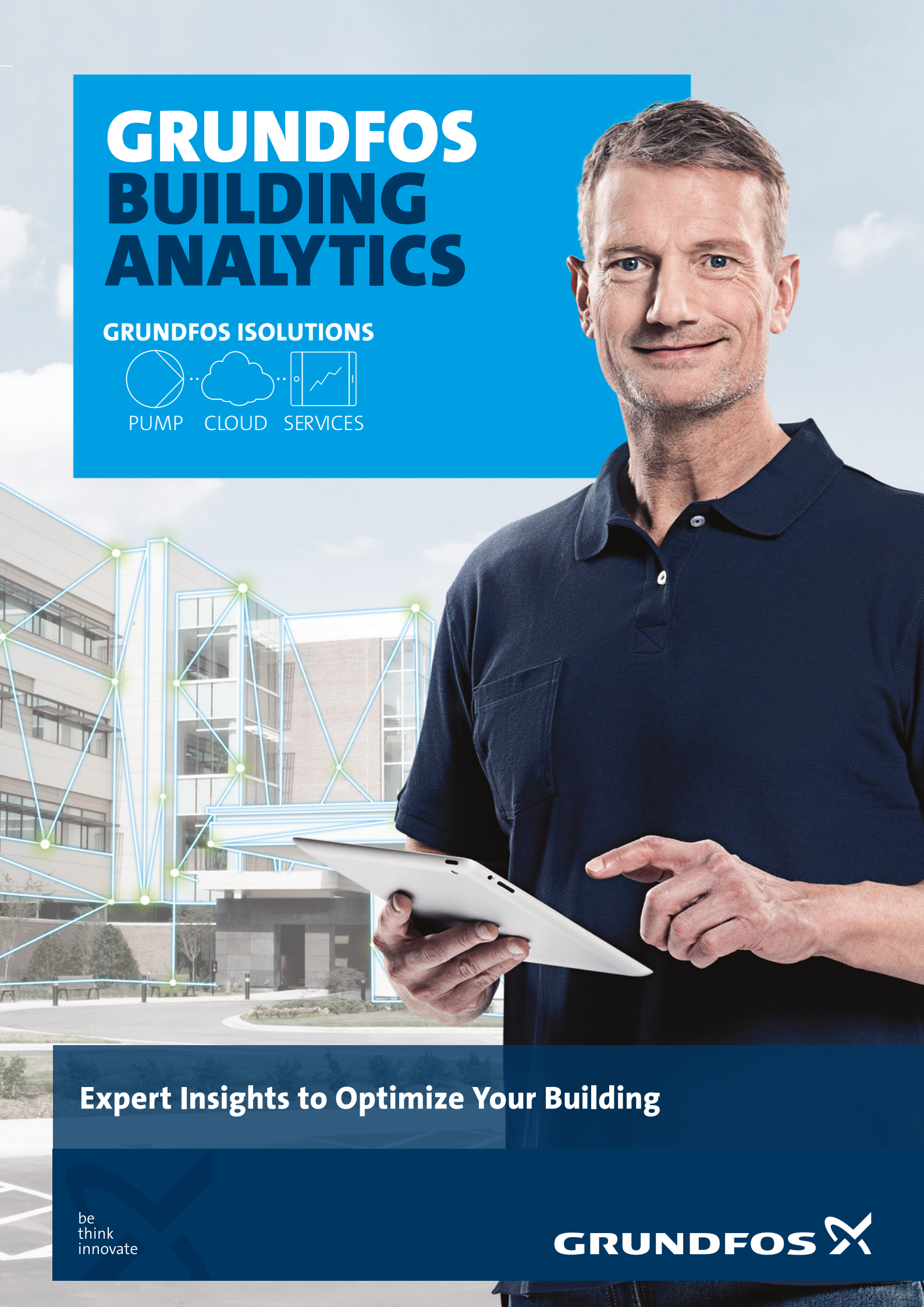


GRUNDFOS BUILDING ANALYTICS

GRUNDFOS ISOLUTIONS



Expert Insights to Optimize Your Building

be
think
innovate

GRUNDFOS 

A single building can have a large network of independent functions working simultaneously but not necessarily as a system. Overwhelming amounts of data come independently from HVAC, plumbing and other mechanical systems, and while every stream may be tracked in your BMS, it's rarely cross-referenced, actionable or optimized.

Meanwhile, your team is stretched thin and pressured to improve occupant comfort, control costs *and* comply with aggressive corporate and governmental sustainability goals. Even regularly consulting BMS dashboards can mean you're maintaining the norm rather than driving new value. Most buildings remain on planned or reactive maintenance schedules that can lead to unnecessary costs and, worse, **uncomfortable occupants.**

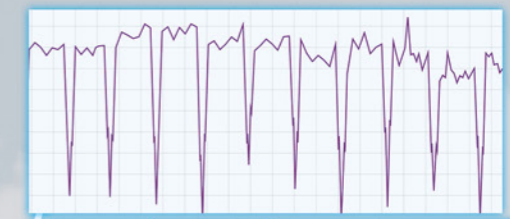
BUILDING DATA IS COMPLEX

It doesn't have to be this way. Finally, you can harness the power of cloud computing, artificial intelligence and cost-effective IoT technology to take a proactive approach to your building that delivers consistently, improves efficiency *and* reduces costs.

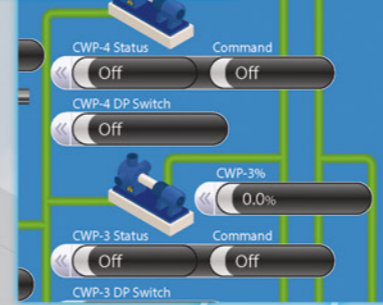
Grundfos iSOLUTIONS CLOUD Building Analytics, powered by CopperTree Analytics, can help.

The supply part

Name	Status
Air-intake damper	Open
Pressure switch fo filter (PDS)	Clogged
Rotary heat exchanger temperature sensor (TE)	59.2 C
Electric heater	Normal
Pressure switch fo fan (PDS)	Normal
The fan motor	Normal
Temperature sensor, electric heater (TE)	24.11 C



Day	UnOccupied	Occupied	UnOccupied
Monday	UnOccupied	Occupied	UnOccupied
Tuesday	UnOccupied	Occupied	UnOccupied
Wednesday	UnOccupied	Occupied	UnOccupied
*Thursday	UnOccupied	Occupied	UnOccupied
Friday	UnOccupied	Occupied	UnOccupied
Saturday	UnOccupied	Occupied	UnOccupied
Sunday	UnOccupied	Occupied	UnOccupied

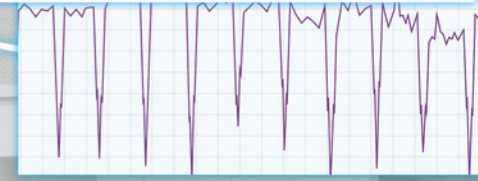


Boiler Proof Setpt	48.89 °C
Lead Boiler	2.00
Boiler Proof Delay	300 s
Boiler Rotate Hrs.	24 hr
Boiler 1	6881 hr
Boiler 2	10214 hr
Reheat Demand	On

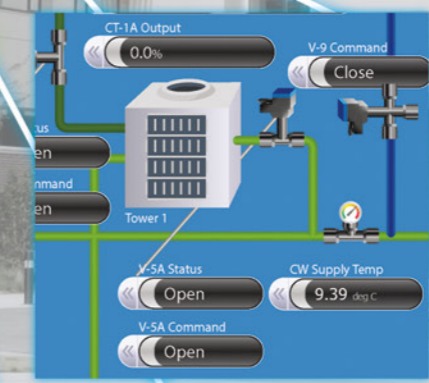
NAME: FAILURE ALARM
 Status: Alarm
 Date: 01/01/20 5:00 AM CDT
 Priority: 70
 Value: Alarm
 Description: Chiller Failure Alarm

Space	Setpoint	Fan 1 Status
27.33 °C	22.22 °C	On

Communication Status: On
 Cooler Enable: Off
 Outside Air Temp: 13.33 °C
 Outside Air Lockout: 7.22 °C
 Space Temp: 22.67 °C
 Space Setpt: 23.89 °C
 Unit Run Command: Off
 Warning Error: Off
 Critical Error: Off
 Dat: 13.33 °C
 Fan Speed: 20 %
 Min Speed: 20 %
 Fan 1 Status: On
 Fan 2 Status: On
 Cool Output will run for 3 minutes without the Supply Fan to prevent the evaporator pads



Heat	DAT
Off	37.78 °C
Off	42.78 °C
Off	38.89 °C



Cooling Tower 2

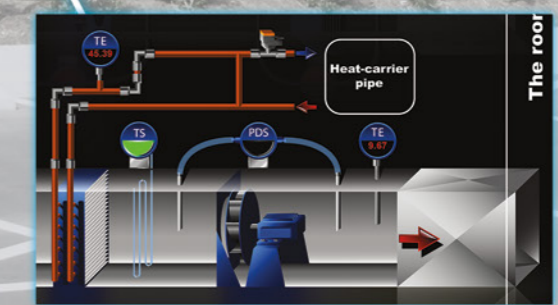
Sump Temperature: 8.72 deg C
 Sump Heater: Off
 Vibration Alarm: Normal
 Level Alarm: Normal



Space	Cool SP
27.17 °C	43.33 °C
26.33 °C	43.33 °C
26.5 °C	43.33 °C

Coolant System Pumps

Tower Fan: On
 Tower Pump: On
 Tower Pump Tstat: Off



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BUILDING DATA MADE SIMPLE WITH GRUNDFOS

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Grundfos iSOLUTIONS CLOUD Building Analytics, powered by CopperTree Analytics, can help.

We transform raw data into meaningful outcomes.

Our data collection device installs and integrates easily with your BMS and streams thousands of raw data points to a secure, cloud-based analytics engine. The Building Analytics custom algorithms and statistical analysis check for system integrity, anomalies and inefficiencies, ultimately leading to an output of actionable insights.

But we don't just tell you how you're doing, like an expensive retro-commissioning report. We help you get where you want to be. Our Grundfos analytics experts do what data alone cannot — like creating custom roadmaps based on your goals, helping drive short- and long-term actions, and bridging the gap between Information and Operations Technology teams. Through consistent partnership, we can help you achieve short-term fixes that can drive long-term building improvements like:

↓ **5–30%**
REDUCTION IN
ENERGY COSTS

↓ **UP TO 60%**
REDUCTION IN HVAC
MAINTENANCE
LABOR COSTS



SMART MAINTENANCE DOESN'T FOLLOW A SET SCHEDULE

A traditional maintenance schedule can lead to expensive unplanned repairs, subpar efficiency and unhappy occupants. It can also waste time with unnecessary, premature site inspections.

Building Analytics keeps your buildings in optimal shape by monitoring equipment and identifying the maintenance activities with the greatest quantifiable impact on energy usage and run times to drive sustained improvement to occupant comfort.

Choose Smarter Priorities

Your Grundfos analytics expert helps you continually analyze and prioritize building activities based on your goals, budgets and initiatives. With a never-ending punch list of things to do, an intelligent approach to prioritization keeps you consistently moving toward your building goals at all times.

Make Data-driven Decisions

Whether you are working toward sustainability initiatives, improving compliance, boosting lease retention or conducting capital planning, your Grundfos analytics expert can help by assessing up to 12 prioritization factors, including environmental impact, avoidable costs and mechanical system health.



You'll receive a report that includes detailed insights and clear recommendations to optimize equipment and building performance, tailored to your operational setup.

MINOR FAULTS DON'T HAVE TO BECOME MAJOR PROBLEMS

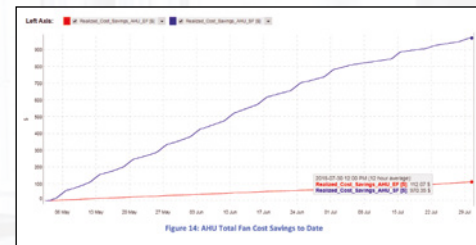
The Building Analytics data engine constantly monitors for anomalies or early signs of trouble — not only drastic disruptions to tenant comfort, but also less noticeable changes to system operations that can accumulate unwanted cost over time.

Detect & Diagnose

When Building Analytics notices something amiss (such as poor equipment sequencing, failed / poor actuators, low ΔT syndrome, or building energy drift), your staff is notified and provided with an actionable roadmap to fix the issue(s).

Keep Your Occupants Comfortable

Don't wait for your occupants to alert you to trouble. Proactive fault detection empowers you to make upgrades and repairs before a failure occurs — and before anyone complains.



Your report also includes realized savings details for all the recommendations that have been implemented using Grundfos.

Transform your data into action
Learn more at grundfos.com/buildinganalytics



Sustainability is in our DNA, and we are committed to helping you achieve your goals. We have anchored our development to the United Nations Sustainable Development Goals (SDGs), particularly SDG #6 (water) and SDG #13 (climate). Our mission is to help you increase efficiency for SDG compliance while pursuing your own sustainability initiatives.

Grundfos is one of the world's leading suppliers of solutions across the full range of pump applications — all the way from water supply to wastewater discharge.

In Grundfos Commercial Buildings, we think beyond the pump. Our goal is to understand the building as a whole in order to provide you with intelligent solutions that achieve a higher level of performance in your systems.

This approach has made us a preferred partner for contractors, consulting engineers and building owners looking to build the most sustainable and efficient commercial buildings in the world.

To learn more, go to grundfos.com/buildinganalytics