



# HOW BASF USES FOCUS-1 TO REGULATE NETWORK AND SAFE ENERGY COSTS

## HIGHLIGHTS

- Easy & Simple Installation due to compact design
- Seamless integration with existing PROFINET system
- Comprehensive control and monitoring with integrated sensors
- Enhanced operational efficiency and safety



## 1. BACKGROUND

Returkraft is a Norwegian company that specializes in generating district heating and electricity by incinerating waste. Operating from their state-of-the-art facility, Returkraft plays a critical role in sustainable waste management by converting waste into valuable energy. Their operations help reduce landfill usage and contribute to environmental sustainability by providing a reliable source of renewable energy. The company is dedicated to innovation and efficiency, ensuring that their processes are both environmentally friendly and economically viable.

## 2. CONTROL REQUIREMENT

At Returkraft, the efficient operation of the waste-to-energy plant is crucial for maintaining a consistent generation of district heating and electricity. The primary challenge faced by the plant is ensuring a steady burn of waste material to keep the steam generator running efficiently. To address this, Returkraft initiated a pilot program to add wastewater to the furnace. This approach is designed to enhance the combustion process, ensuring that enough waste is burned to sustain optimal steam production. The addition of wastewater needs to be meticulously controlled. The flow rate must be precisely regulated to avoid excessive use of wastewater and to prevent any negative impact on the furnace flames. Maintaining the correct balance is essential to ensure the flames remain stable and the combustion process is not disrupted. Accurate and responsive control is necessary to optimize the combustion process and maintain the efficiency and safety of the steam generator. The implementation of FOCUS-1 provided the integrated control and measurement system required for this delicate balance, ensuring precise regulation of the wastewater flow into the furnace.

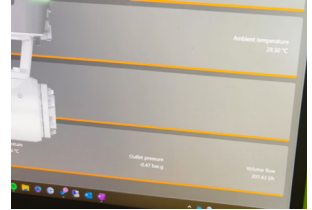


### 3. FOCUS-ON LÖSUNG

To address the control requirements at Returkraft, the FOCUS-1 smart meter valve was implemented. The compact design of FOCUS-1 was ideal for the limited space available for the control loop installation. FOCUS-1 integrates multiple functions, combining a control valve, flowmeter, and pressure and temperature sensors into a single device. This integration significantly reduces the complexity and space requirements for installation.



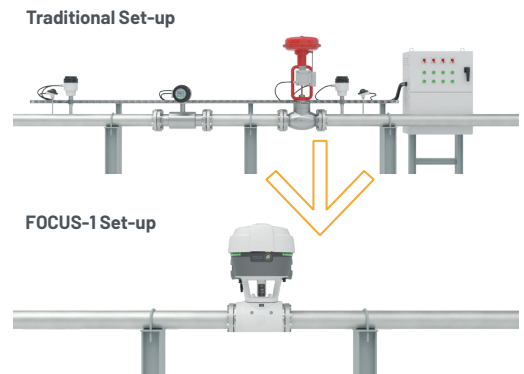
Additionally, FOCUS-1 seamlessly connects to the plant's existing PROFINET system, simplifying the integration process. This ease of integration was crucial for Returkraft, which lacks internal automation engineers. The straightforward setup allowed Returkraft to quickly get the system up and running without the need for extensive external support.



FOCUS-1's internal PID controller ensures precise regulation of the wastewater flow into the furnace, maintaining the necessary balance to support efficient combustion. The real-time data provided by the integrated sensors allows for continuous monitoring and adjustment, ensuring optimal performance. This comprehensive solution not only enhances the combustion process but also contributes to the overall efficiency and safety of the steam generator, supporting Returkraft's goals for sustainable energy production.

### 4. CUSTOMER BENEFITS

- **Easy Installation:** The compact design of FOCUS-1 allowed for installation in limited space without requiring extensive modifications.
- **Seamless Integration:** The FOCUS-1 device easily connected to the existing PROFINET system, facilitating a quick setup without the need for in-house automation engineers.
- **Enhanced Control and Monitoring:** Integrated sensors provide real-time data, enabling precise control of wastewater flow and ensuring stable combustion.
- **Operational Efficiency:** The internal PID controller optimizes the combustion process, enhancing the efficiency of the steam generator.
- **Reduced Complexity:** Combining multiple functions in a single device reduces the complexity and space requirements of the control system.
- **Improved Safety:** Continuous monitoring and precise regulation help maintain safe operating conditions in the furnace.



### 5. PRODUCT USED

- FOCUS-1: The Smart Meter Valve for flow, pressure, and process control. This all-in-one solution features a control valve, flowmeter, and pressure and temperature sensors. All components are standard SAMSON & KROHNE devices, known for their reliability and performance.
- By utilizing FOCUS-1, Returkraft significantly improved their pilot project through simplification.



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ANWENDUNG VON FOCUS-1  
ERFAHREN?

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