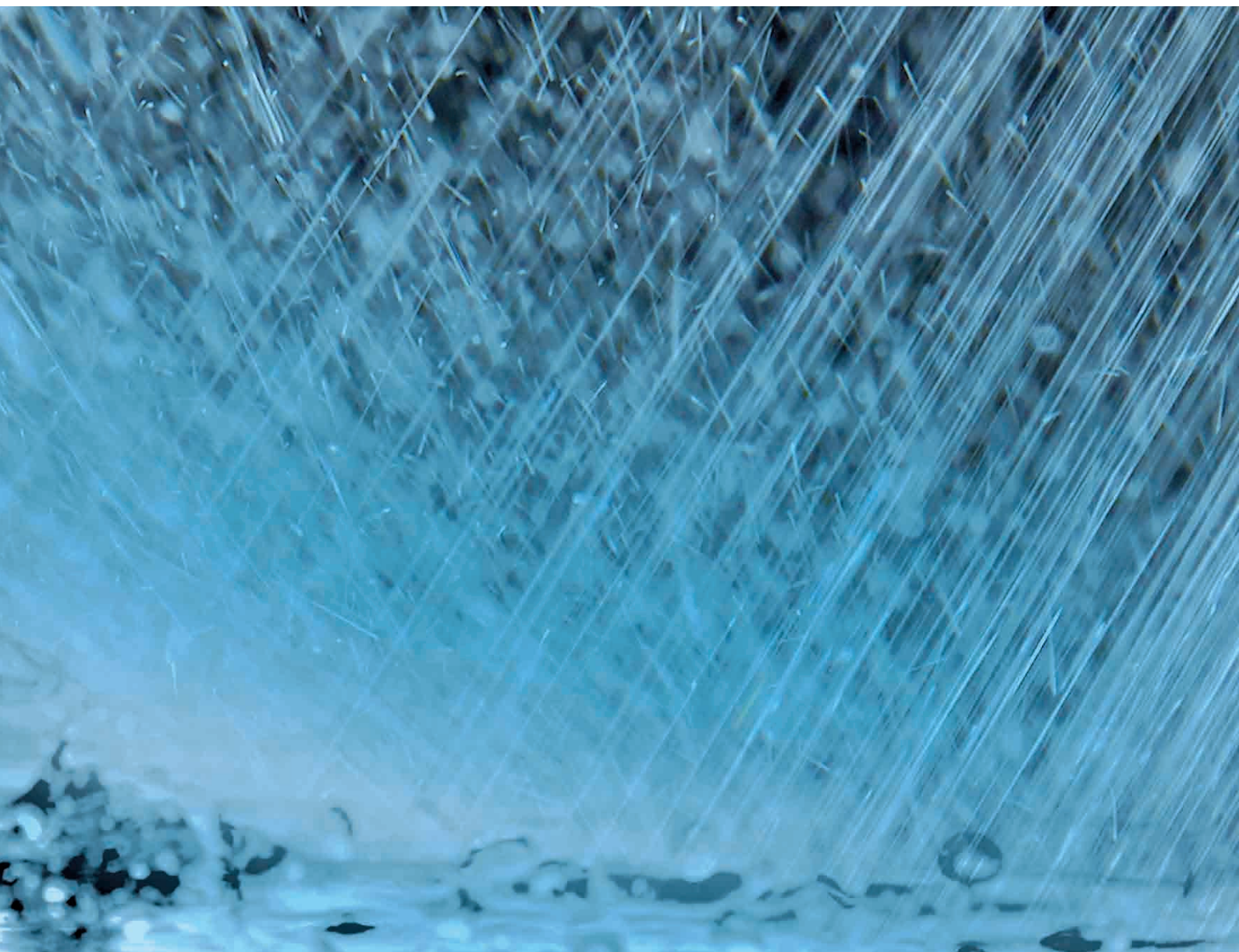


# Automation of rainwater overflow basins

**FESTO**



# Intelligent automation of rainwater overflow basins ...

Rainwater retention and rainwater treatment basins are an integral part of our sewage systems. In addition to water pollution control, their main function is the controlled discharge of rainwater into the wastewater treatment plants following heavy rainfall.

More than 40,000 of these basins are in use – some for over 20 years – and many still have mechanical flow control devices to regulate drain rates.

In the age of Water 4.0, however, there will be future requirements that these mechanical devices cannot meet, such as determining and balancing the amount of discharged rainwater. This can only be done with modern measurement technology such as electromagnetic flow meters.

Festo uses these meters in combination with pneumatically actuated control valves for the flexible and precise adjustment of the discharge quantities. Sensors and valve actuators are connected via an on-site automation system, thus ensuring safe and reliable operation. This automation system can be easily connected to the control systems of the wastewater treatment plant. Remote control technology enables both informal communication and of course intervention without having to physically go to the plant as was previously the case.

We offer three ways of equipping your basin(s) with measurement and control technology.

## Variant 1: solar cells on a fixed post



### Conditions on site:

No operations building, no power connection

### Our solution:

Energy-autonomous automation. Power is generated via solar panels or alternatively via wind energy. It is used to operate the controller and to provide the air for the process valves via a small compressor. The components are housed in a concrete station to protect them from the weather.

## Variant 2: solar cells on a roof



### Conditions on site:

Operations building in place, no power connection

### Our solution:

The components specified in Variant 1 are installed in the existing structure/operations building.

## Variant 3: mains power connection in place

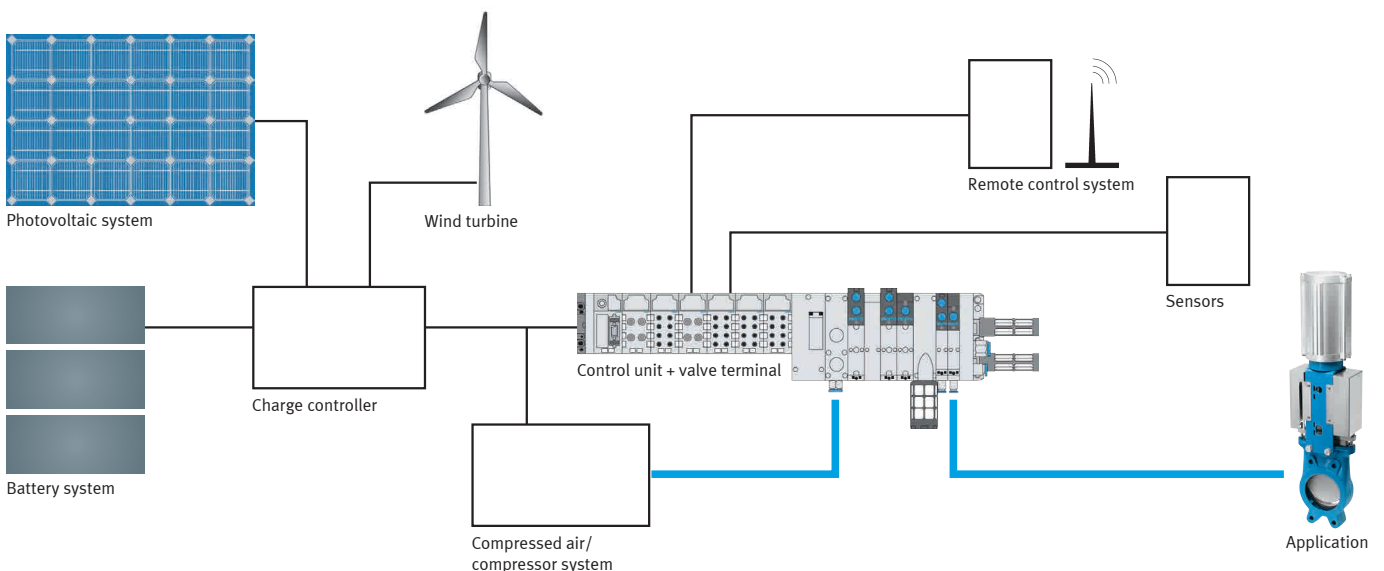


### Conditions on site:

Operations building and power connection in place

### Our solution:

Compressed air generation and control cabinet for automating the sensors and process valves



Sample system solution for automated rainwater overflow basins

## ... according to your individual requirements

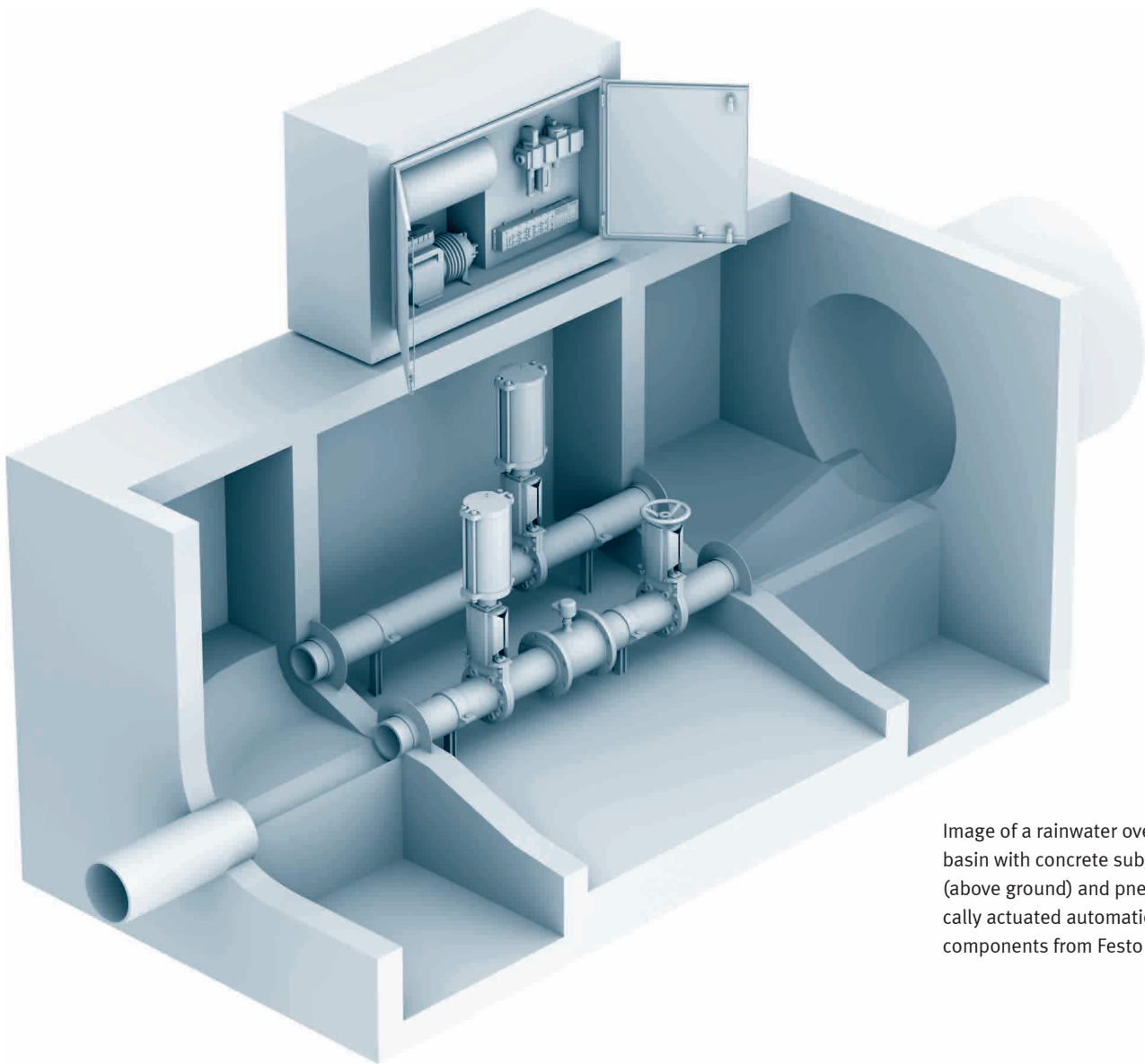





Image of a rainwater overflow basin with concrete substation (above ground) and pneumatically actuated automation components from Festo

			
Concrete substation for housing/installing the technical components	•		
Automation of the controlled outflow using pneumatically actuated knife gate valves in combination with flow measurement using electromagnetic flow meters	•	•	•
Automation of pneumatically actuated knife gate valves as an emergency circulation system	•	•	•
Compressed air generation and storage on site	•	•	•
Control cabinet with integrated control technology including remote control group	•	•	•
Options according to the system designer's specifications: <ul style="list-style-type: none"> <li>• Actuating pumps for raising surface water</li> <li>• Actuating agitators or jet cleaners for cleaning rainwater basins</li> <li>• Processing sensors such as level, fill level, pressure, etc.</li> </ul>			•

# Efficient and reliable – automation solutions from Festo for rainwater overflow basins

- + Automation reduces operating costs for the plant operator**
  
- + Energy-autonomous automation provides independence from the power grid and saves money**
  
- + Pneumatic automation offers greater operational reliability compared with electric drives**
  - Simple, mechanical design
  - No screw spindles freezing in winter
  - Resistance to continuous loads
  
- + Remote control in automation enables**
  - Monitoring/diagnostics
  - Measured value transmission (flow rate values, supply condition, etc.)
  - Parameterisation/control
  - Communication
  - Balancing of flow rate values
  
- + Water 4.0 in automation enables**
  - Intelligent communication (e.g. with control centre, other rainwater overflow basins, etc.)
  - Load-dependent management of wastewater networks
  - Preventive operation when heavy rainfall is forecast
  
- + Automation using knife gate valves means**
  - Compact installation space
  - Effective flush cleaning thanks to high-speed drives
  - High system control quality

**Would you like to know more about our automation solutions for rainwater overflow basins? Just get in touch!**

You will find your personal contact partner at [www.festo.com/contact](http://www.festo.com/contact)