

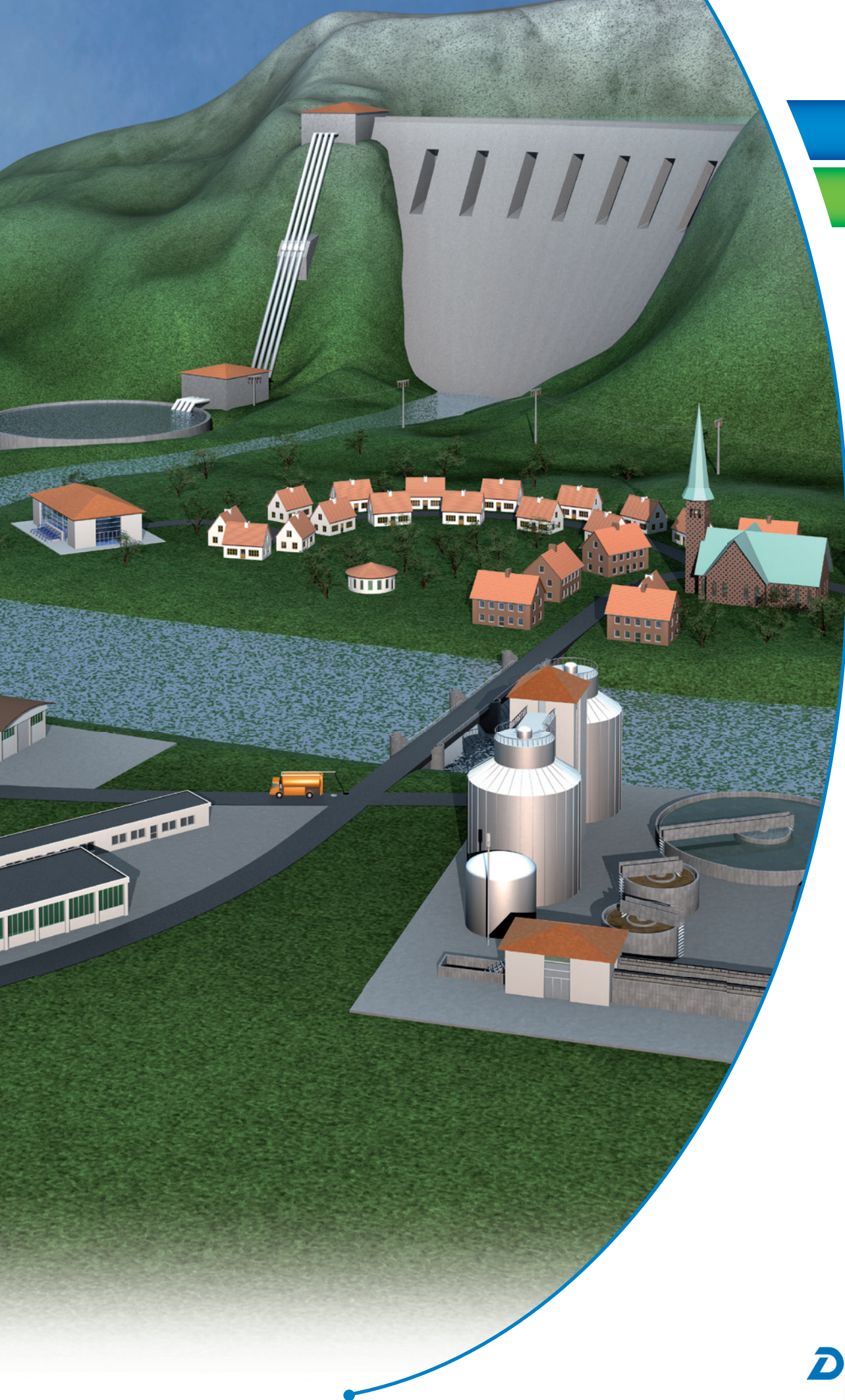


**Process Automation**

**Water**

**WAGO**<sup>®</sup>  
INNOVATIVE CONNECTIONS





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Water is probably the most closely inspected substance that we consume. Understandably, demands for quality inspection equipment are extremely high in order to complete time-consuming inspections. Whether focusing on solutions based on superior contact integrity and vibration-resistant terminations, or the automation of entire facilities, our emphasis has always been satisfaction through innovation. At the heart of everything we do are: low-cost installations, ease-of-use and low maintenance.



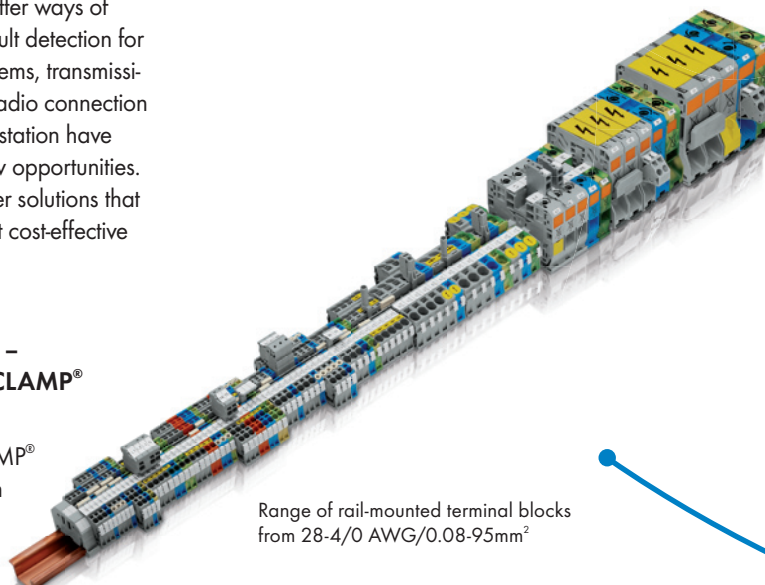
## WAGO Products Ensure Freshness

## Process Automation

The areas of water catchment and treatment continue to evolve at a rapid pace, posing new challenges. Finding better ways of performing tasks such as fault detection for mobile water treatment systems, transmission of level values and the radio connection of water tanks to the pump station have presented WAGO with new opportunities. We will continue to engineer solutions that solve these tasks in the most cost-effective and flexible way possible.

### Explosive environment – Reliability with CAGE CLAMP®

Daily, WAGO components equipped with CAGE CLAMP® Spring Pressure Connection Technology prove their value under the harshest conditions. Over the years, WAGO has developed an enviable safety record, including approvals for use in potentially explosive environments, an impressive array of robust components that readily withstand aggressive environments and safe, truly maintenance-free connections.



Consider WAGO to be your dependable partner for advanced, high-quality and reliable solutions – just the right thing for your systems!





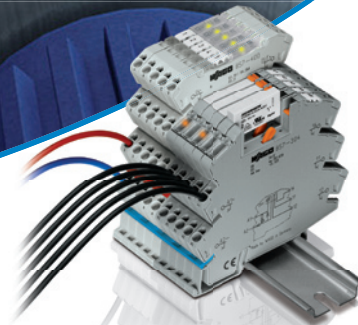
WAGO SPEEDWAY,  
modular IP67 I/O system



WAGO Bluetooth® RF transceiver



TO-PASS® GPRS modem



JUMPFLEX®  
transducers/relay and  
optocoupler modules



We rely entirely on technology to effectively treat and clean liquid waste. However, given the strain on municipalities and personnel, all innovations used for wastewater processing must be cost-effective and easy-to-use. With WAGO, you have one of the leaders in electrical and automation technology - every innovation and every solution will lead to satisfaction.

In wastewater processing, the greatest demands are placed on the quality of components and materials used in these ultra-harsh environments. WAGO products readily meet and exceed the challenges posed by these environments



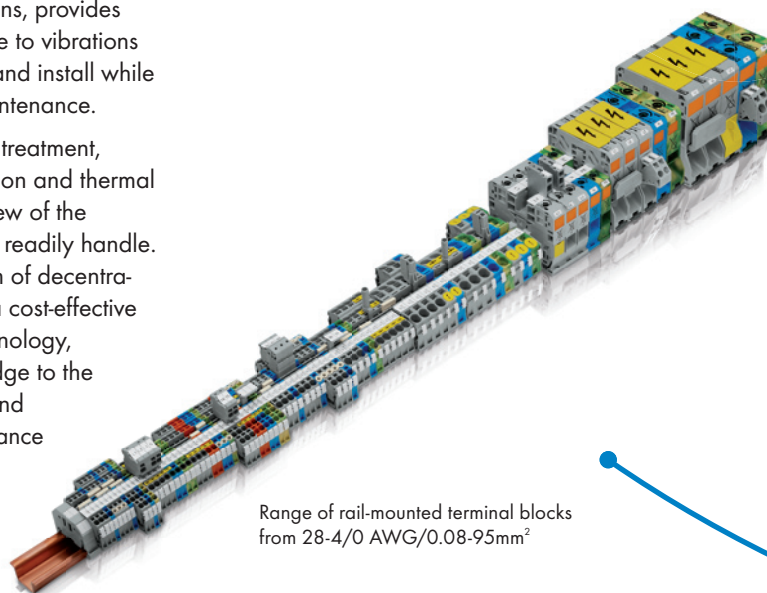
## WAGO Products Ensure Clarity

## Process Automation

through process technology that: resists aggressive environments found in wastewater treatment installations, provides a superior contact immune to vibrations and expedites assembly and install while significantly reducing maintenance.

Automating sludge water treatment, light/heavy load elimination and thermal sludge drying are just a few of the applications our products readily handle. Convenient fault detection of decentralized pump stations and a cost-effective connection via radio technology, e.g., from the scraper bridge to the control technology, demand practical and low-maintenance solutions to benefit wastewater plant employees.

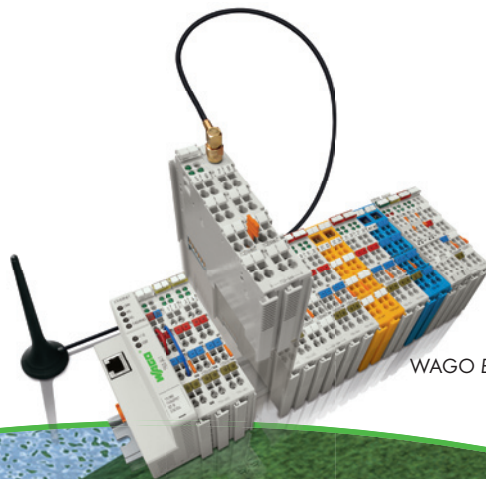
When it comes to technical components, WAGO is your dependable partner for fulfilling these demanding requirements in systems and process technology.



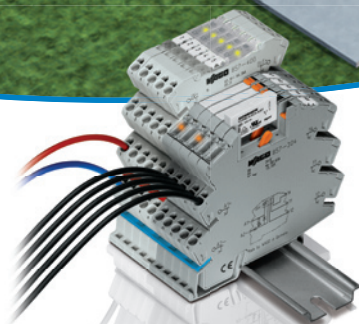




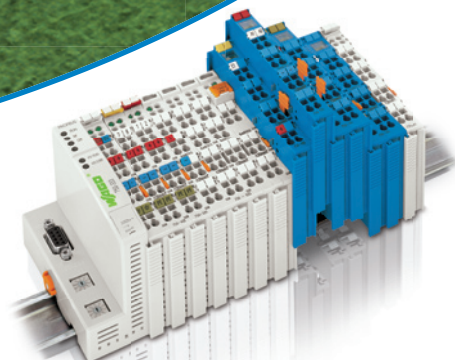
WAGO SPEEDWAY,  
modular IP67 I/O system



WAGO Bluetooth® RF transceiver

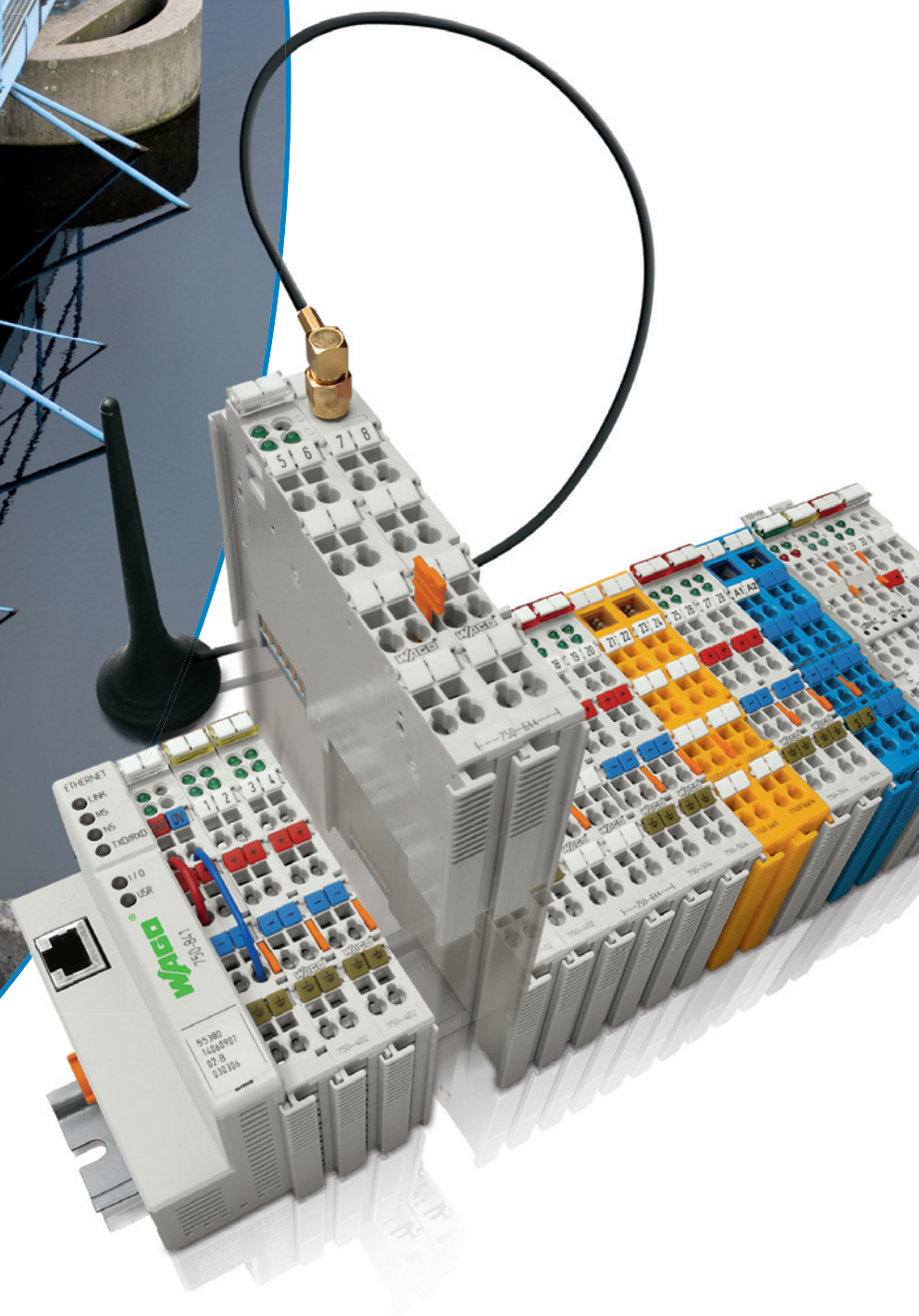
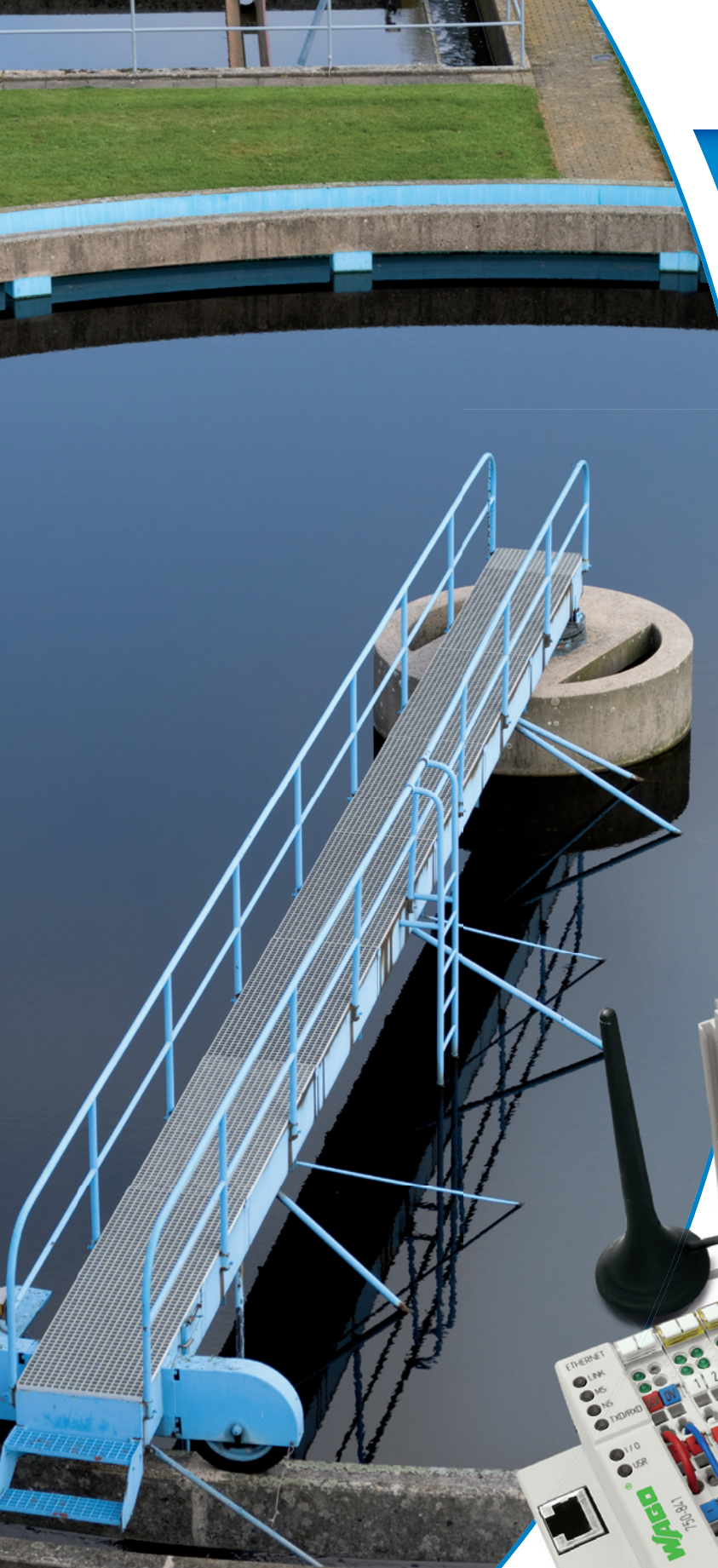


JUMPFLEX®  
transducers/relay and optocoupler modules



WAGO I/O-SYSTEM  
for hazardous areas







# All in One

## WAGO-I/O-SYSTEM

### Maximum output, minimum space

Automating in water and sewage treatment facilities places great demands on the signal capturing abilities of sensors and actuators. These aggressive operating conditions and hazardous areas demand the safety and reliability provided by robust materials. Given these circumstances, it must be possible to easily expand process control systems in a cost-effective manner while ensuring reliability. The modular, flexible and fieldbus-independent WAGO-I/O-SYSTEM meets, and exceeds, these challenges. The advanced I/O system features a high-quality spectrum of analog, digital and specialty input and output modules for components in extreme environments, from fieldbus couplers to high-performance industrial PCs.



### The most compact, modular and fieldbus-independent I/O system for decentralized automation.

Fine modularity and fieldbus-independence are hallmarks of the WAGO-I/O-SYSTEM, which boasts worldwide approvals for a diverse range of applications. During development, great care was taken to ensure the system could account for all the requirements placed on decentralized fieldbus systems.

Optimized for process-oriented communication, the WAGO-I/O-SYSTEM offers high integration density with an unbeatable price/performance ratio.

Advantages for building and industrial automation:

- Modular construction: Digital, analog and specialty modules can be combined in virtually any manner within a node, including outputs with different capacities up to 230V.
- Freely programmable: Comprehensive programming possibilities in compliance with IEC 61131-3
- Supports all common fieldbus systems: telecontrol protocol, PROFIBUS, PROFINET, ETHERNET, etc.
- Safety approvals
- Easy integration of specialty functions, such as safety modules, Exi, vibration analysis and motor controls.
- Radio technology



# Not Afraid of the Water

## WAGO SPEEDWAY 767

Components employed in water and sewage automation, such as water treatment plants, are frequently subjected to harsh environmental conditions. WAGO has engineered the ideal solution – a high-performance, cabinet-free control system that dramatically streamlines install times and costs.

### Cabinet-free

WAGO SPEEDWAY 767 has been extensively engineered and constructed to suit a diverse range of applications that few other systems could ever achieve. Features such as splash water protection and an expanded temperature range optimize system connectivity. The IP67-grade modules are extremely robust, making them well-suited to areas prone to grease, oil and dust.



### The new performance standard in cabinet-free automation.

#### Perfection - in every detail:

- Modular design
- High-performance data transfer
- CoDeSys 3 programmable (IEC 61131-3)
- FDT/DTM configuration
- Asynchronous and synchronous diagnostics
- Fieldbus independent
- USB interface
- Comprehensive safety features
- Excellent EMC protection
- Efficient power supply solution
- Temperature range from -25°C to +60°C
- IP67 degree of protection (fully encapsulated)
- Screw and DIN-rail mount options
- Ergonomic design









# Always Informed

## TO-PASS<sup>®</sup> Telecontrol Solutions

### Exact measurement values for the control center

Many values must be monitored in water and sewage treatment facilities: fill levels in water tanks, temperature and pressure in exterior pump stations or pH values in the treatment process. System components such as pump stations are often several kilometers away from the main system. When problems arise, fault messages, alarms and notifications must be transmitted quickly and securely. The cost-effective solution is TO-PASS<sup>®</sup> – the right device for every application. TO-PASS<sup>®</sup> transmits measurement values via GSM network and can also utilize GPS if mobile units must be located. With the possibility of storing measurement values on any Web server, you have access to process data from nearly everywhere in the world.



### From fault detector to intelligent telecontrol PLC.

- A seamless telecontrol solution, consisting of stand-alone fault detectors with GSM connection, optional IP66 protection and a telecontrol PLC that links to the WAGO-I/O-SYSTEM.
- Transmission based on the international IEC 60870-5-101/104 telecontrol protocol standard.
- Use of GSM (GPRS, CSD, SMS) mobile radio network.
- Open system with user-selected Internet server.













# Flexible Signal Transformation

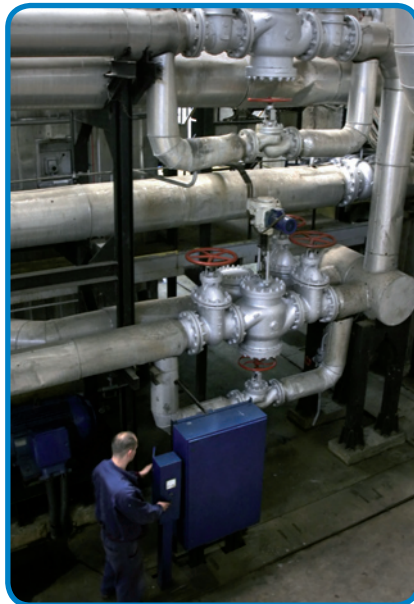
## JUMPFLEX® 857 Series

Need to record measurement data in water and sewage treatment facilities and then condition, convert and forward these values?

### Near the action

JUMPFLEX® easily and securely processes signals received from the field. Designed for extreme applications, JUMPFLEX® transducers feature CAGE CLAMP® for vibration- and temperature cycling-resistant terminations that are maintenance-free. This makes JUMPFLEX® ideal for water and sewage treatment facilities.

JUMPFLEX® readily handles challenges such as ambient temperatures ranging from an icy  $-25^{\circ}\text{C}$  to a scorching  $+70^{\circ}$ , and thanks to a compact housing of just 6mm/0.23in, nothing stands in the way of decentralized installations.



### For extreme applications

Greater range of applications due to extended temperature range of  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ .

### Industry's most compact

"True" 6.0mm/0.23in width maximizes panel space.

### Flexibility at its finest

Configuration via DIP switch. Transducers can also be configured via software.

### Highest safety

All devices provide "safe isolation" with 2.5kV test voltage to EN 61140.

### Transducers:

- Millivolt transducer
- Threshold value switch
- Temperature transducer for RTD
- Temperature transducer for thermocouples
- Isolation amplifier
- Passive isolator
- Repeater power supply
- Signal splitter

### Relays and optocouple modules:

- DC relay modules
- DC relay modules with gold contacts
- Optocouplers
- AC/DC relay modules
- AC/DC relay modules with gold contacts

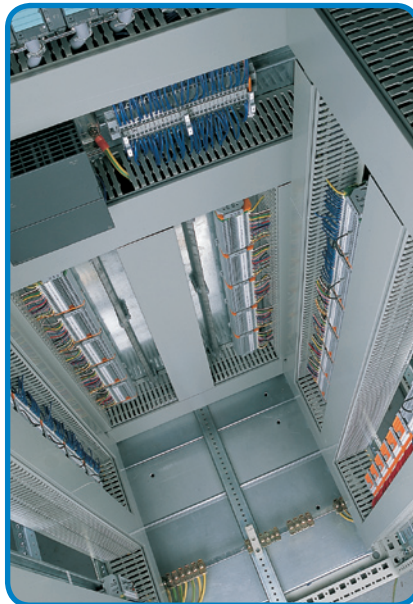


# Reliable Connections

## TOPJOB®S

Water and sewage treatment facilities subject connections to some of the most demanding operating conditions. Efficiency and safety rely on connections that offer the reliability of a vibration- and temperature cycling-resistant design, along with fast terminations.

Based on sophisticated CAGE CLAMP®S Spring Pressure Connection Technology, TOPJOB®S terminations meet these requirements while eliminating frequent maintenance and failures caused by loose connections. This all adds up to a range of rail-mounted terminal blocks that were seemingly designed for water and wastewater treatment.



### The range of rail-mount terminal blocks. Simply brilliant.

With just one range of rail-mount terminal blocks, WAGO can fulfill virtually all industrial, Ex application and building installation needs. Thanks to CAGE CLAMP®S technology, the TOPJOB®S DIN-rail mount terminal blocks are the industry's most compact. Their design can save up to 30% more space over other terminal blocks – ideal for space-restricted applications such as switch cabinets or junction boxes.

CAGE CLAMP®S provides tool-free terminations for all conductor types. Other benefits:

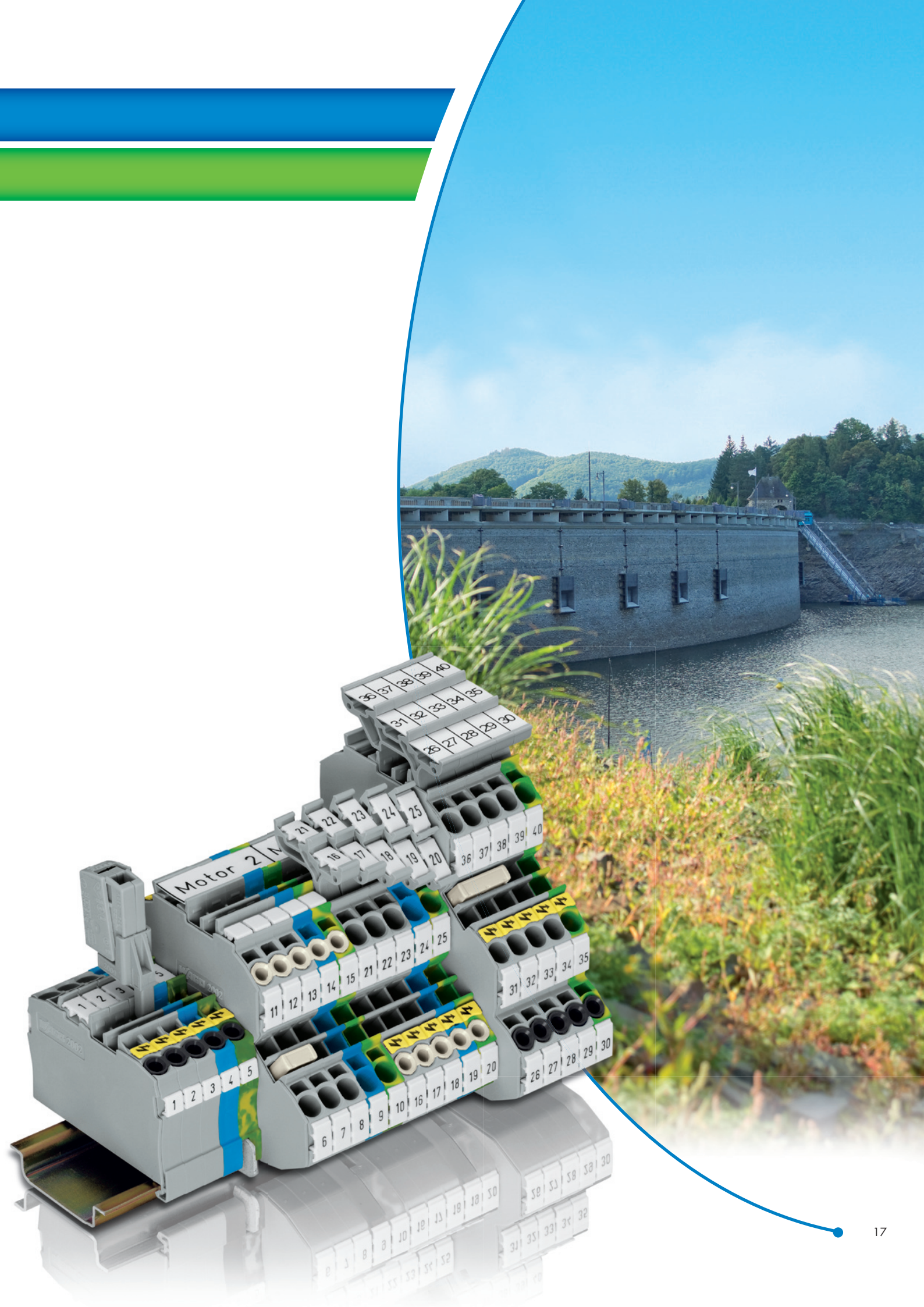
- Extremely compact design for more wiring space or smaller switch cabinets/terminal boxes.
- Robust, spring-loaded jumper system for full nominal current
- Connectors are reliably connected
- Cost-effective marking system
- Ex approvals are standard
- POWER CAGE CLAMP terminal blocks also provide screwless termination of conductors up to 4/0 AWG (95mm²)

### When unreliable would be inexcusable

Temperature fluctuations, vibrations and environmental aggressors mean screw connections must be checked and adjusted frequently. This is where CAGE CLAMP®S excels. In addition to minimizing wiring and installation times, all terminations are permanently gas-tight, vibration-proof and maintenance-free.







## ETHERNET

Control of medium and low-voltage switching systems, filter treatment, and emergency power supply at the **Wasserwerke Bayerischer Wald**.

The switch cabinet for each individual subsection is equipped with a programmable WAGO ETHERNET controller that activates local manual operation at the cabinet automatically in the event of power failure. Normally, the controllers

## Use

communicate with the PMC (Process Measurement and Control) central equipment via separate lines. The point-to-point connections prevent faults from penetrating the whole system.















## Use

WAGO SPEEDWAY in use at the brewery wastewater system at **BIONADE** in Ostheim, Germany. The system pre-treats wastewater from beverage production and bottle cleaning. SPEEDWAY connects digital inputs and outputs, performs end switch monitoring of pneumatic valves and drives, and performs other process-vital tasks.

# WAGO Product Information

All WAGO products depicted in this brochure are in the following WAGO full line catalogs:

## Full Line Catalog Volume 1 Rail-Mounted Terminal Block Systems

- Rail-Mounted Terminal Blocks
- X-COM®-SYSTEM
- Terminal Strips
- Patchboard Systems
- Shield (Screen) Connecting System



## Full Line Catalog Volume 2 PCB Terminal Blocks and Connectors

- PCB Terminal Blocks
- Feedthrough Terminal Blocks
- PCB Connectors
- Connectors for Special Applications



## Full Line Catalog Volume 3 I/O Systems

- Modular IP20/IP67 I/O-SYSTEM
- Radio Technology
- IP20/67 AS-Interface I/O-SYSTEM
- IP67 Block I/O-SYSTEM
- IP67 Sensor/Actuator Boxes
- IP67 Cables and Connectors
- Power Supplies



## Full Line Catalog Volume 4 Interface Modules

- Interface Modules
- IP67 Sensor/Actuator Boxes
- Radio Technology
- Overvoltage Protection
- Power Supplies
- Empty Housings and DIN-Rail Mounting Carriers





[www.wago.com/epa](http://www.wago.com/epa)

To get a quick product overview, please use the Internet industry portal or the online catalog.

We will be glad to answer your questions at **water@wago.com**.





WAGO Kontakttechnik GmbH & Co. KG  
Postfach 2880 · 32385 Minden  
Hansastraße 27 · 32423 Minden  
Phone  
Head Office +49 (0)571/887 - 0  
Sales +49 (0)571/887 - 222  
Order Service +49 (0)571/887 - 333  
Technical Support +49 (0)571/887 - 555  
Fax +49 (0)571/887 - 169  
E-mail [info@wago.com](mailto:info@wago.com)  
Internet [www.wago.com](http://www.wago.com)

