

# Automated phosphorus treatment

Real-time phosphorus optimization with Kemira KemConnect™ for reliable effluent quality



## Phosphorus – both a precious element and environmental risk

Inadequately treated or untreated wastewater can result in significant amounts of phosphorus compounds entering our rivers, lakes, and seas, where they act as fertilizer for algae and aquatic plants. Ultimately this can lead to eutrophication and the water being unable to support itself in a natural balance.

The chemical removal of phosphorus from wastewater streams using iron or aluminum salts – so-called inorganic coagulants – therefore plays an important role in maintaining water quality. No other process removes phosphate compounds faster, more reliably, or more cost effectively.

The challenge for plant operators is to consistently comply with ever-lower regulatory

limits while dealing with fluctuating feed rates and phosphorus loads – all without increasing operating costs unnecessarily by overdosing coagulants.

### KEY BENEFITS



Optimized and stable operational performance



Highly efficient chemical dosing



Reliable effluent quality



Peace of mind

### Real time monitoring – smart chemical management

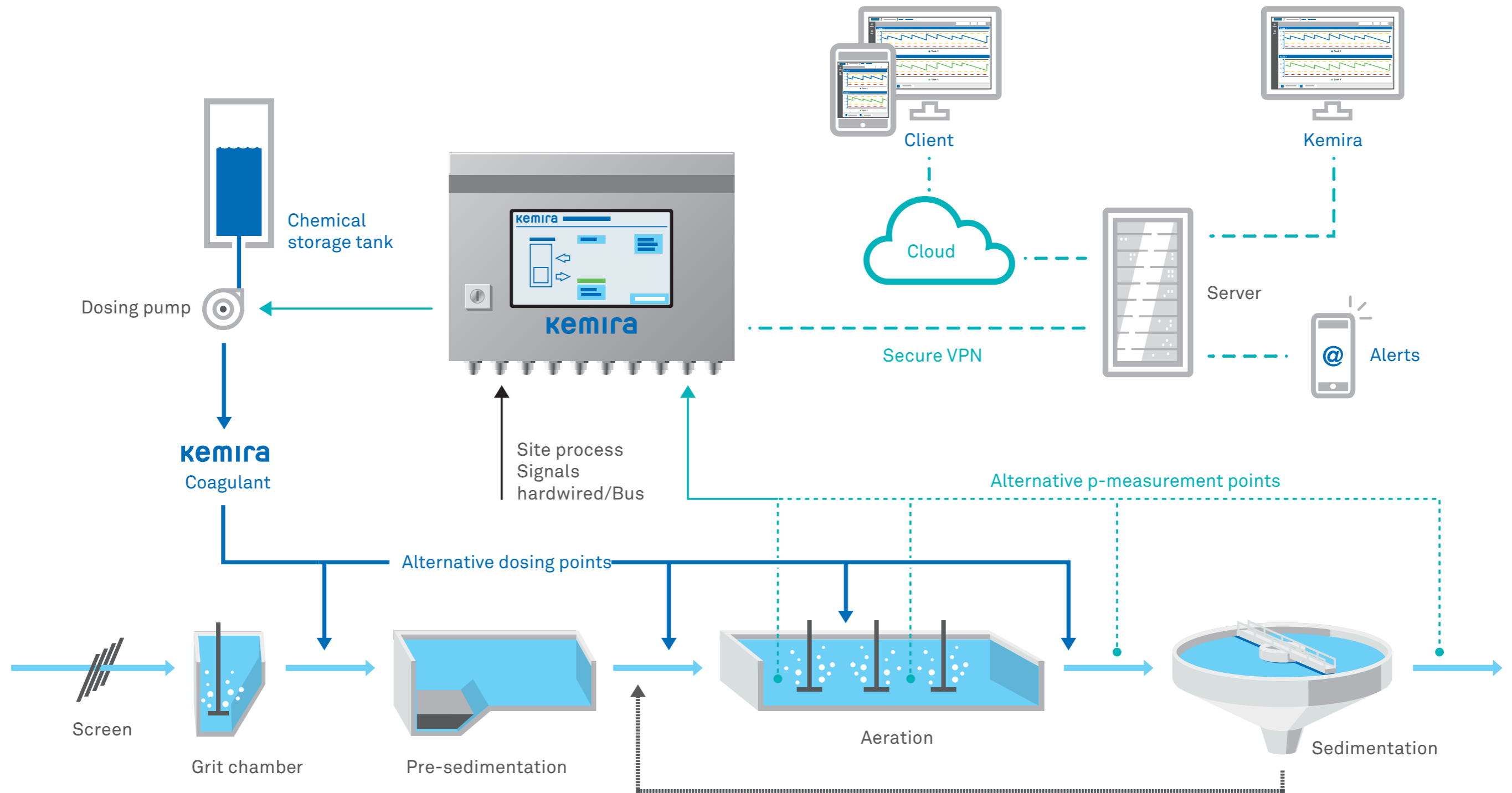
Kemira KemConnect P-optimizer helps plant operators to dose the exact amount of coagulants they require for chemical phosphate removal. Continuous monitoring combined with precise control over product dosing allows operators to react proactively to fluctuations in the feed to their wastewater plant.

With Kemira KemConnect P-optimizer, overdosing “to be on the safe side” is as much a thing of the past as limit violations that result from the late detection of phosphate peaks.

### Turn-key service and reliable supply

To ensure a quick start-up phase, Kemira installs and calibrates the relevant sensors, supplies the required chemicals, and ensures that your staff receives proper training. We can also manage future maintenance and calibration activities so that you can focus on managing and optimizing your operations.

For even smarter chemical management, KemConnect P-optimizer can be combined with KemConnect VMI, our real-time stock-monitoring solution.



## Offering

### Technical features

- Chemical dosing optimization and process monitoring with set-level notifications and alarms via email and/or SMS
- Automatic reporting through KemReports
- Data can be received either as hardwired signals or with multiple industrial protocols
- Flexible and scalable control system that can support additional signals and even additional chemical optimization
- Flexible WAN interface: Edge, 2G, 3G, 4G, LAN, Wi-Fi
- Data is available securely online via individual user accounts
- Data is VPN-encrypted and sent securely using two-factor access control and strict data separation and authentication.



### Installation

The KemConnect unit comes with an RST enclosure. Optional configurations: wall mounted, freestanding, or freestanding outdoor with extended temperature range.

Weatherproof phosphate analyzer 0.05 – 50mg/L with low maintenance two-point sampling.

The system requires a standard electrical power supply and connection to process data.

### KemConnect P-optimizer control unit properties

Supply voltage	100-240 VAC 16A
Operational voltage	24 V
Internet connectivity	LAN, 2G, 3G, 4G, ADSL, PSTN, Wi-Fi (optional)
I/O	As required for the intended application; galvanically isolated
Industrial protocols	Profibus, ProfiNet, Modbus RTU, Modbus TCP
Alarms	Alarm notification by email and/or SMS; Process thresholds; Tank level: critical limit, reorder point, fill capacity; with dead band and activation delay, unit alarms, condition management
Local memory	In the event of data connection failure, the device has an internal memory database for logging up to 1 million data points; data will be stored indefinitely on the KemConnect server database.
Heater and thermostat	20W (optional)
Local operation	Via robust 7-inch industrial touch screen
Remote operation	Via industrial router and secure connection
Enclosure material	Stainless steel (AISI 316) or plastic (optional)
Enclosure Class	IP55 or higher depending on the model
Certification	CE
Dimensions (W x H x D)	600 mm x 600 mm x 300 mm (wall-mounted unit)
Weight	30 kg
Operating conditions	0 - 60 °C, recommended <40 °C, 10–95% relative humidity (non-condensing); -30 to 60 °C (outdoor version)

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