Burkert smart Solutions
Municipal water and waste water treatment

.water .gas .hygienic .micro

bürkert
FLUID CONTROL SYSTEMS

Measuring and controlling

We are simply fascinated by everything that flows

Bürkert at a glance

36
countries worldwide
headquarters Ingelfingen

2.600+
employees
(about 1,600
in Germany)

436.5
million €
product sales

7.2 %
R&D rate

5
Systemhaus locations
3 Germany
1 USA (Huntersville, NC)
1 China (Suzhou)

5
manufacturing sites
in Germany and France

> 100%
annual re-investment rate

72.8 %
sales outside Germany

1946
founded by Christian Bürkert

100%
family business

As of business year 2015

Burkert USA
Our Facility in Huntersville, NC

Everything together
Operations, Purchasing,
Engineering, Assembly,
Quality Management

We think beyond industries –

to focus deep inside your world

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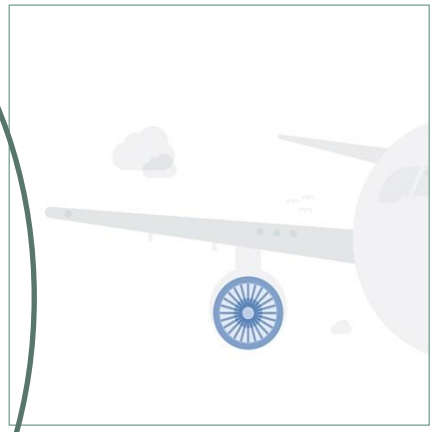
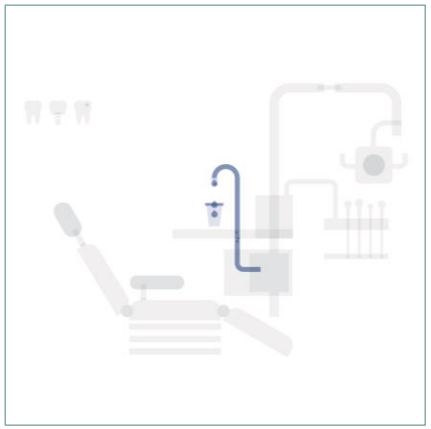
FLUID CONTROL SYSTEMS





.water **.gas** **.hygienic** **.micro**

When it comes to water, we‘re in our element –

and Yours

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FLUID CONTROL SYSTEMS

Drinking Water
Reverse Osmosis
Water Quality
Ion Exchange
Sterilisation
Waste Water
Ultrapure Water
Boiler Feed

Online Analysis System
Type 8905 – for safe and
simplified water analysis

.water

Pneumatic applications in Water treatment

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Pneumatic applications in Water treatment

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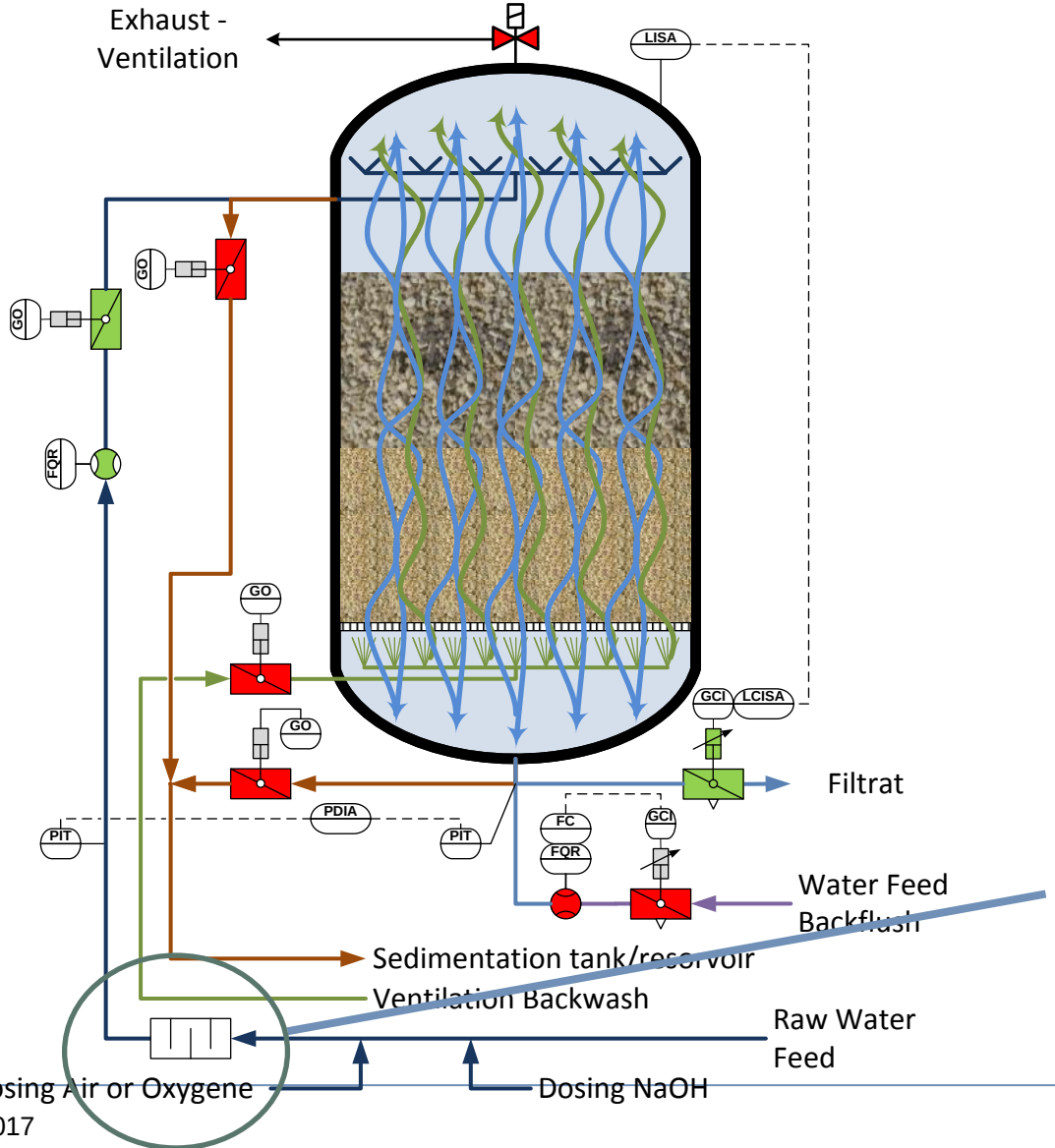
Pneumatic applications in Water treatment

Pneumatic applications in Water treatment

Chrome 6 removal Drinking water
Control valves and Instrumentation

Drinking water Treatment
Removal of Iron & Manganese



open

closed

Drinking water Treatment
Removal of Iron & Manganese

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Drinking water Treatment
Removal of Iron & Manganese

WW Warringholz

WW Everswinkel

WW Achterwehr

Drinking water treatment
Quality monitoring of most important values

Application Drinking Water Works
Example: Inlet water and treated water

Raw water | **Treatment process** | **Distribution** | **Consumer**

Water sourcing:
- Well Fields
- Surface water
- Lakes and artificial lakes
- …

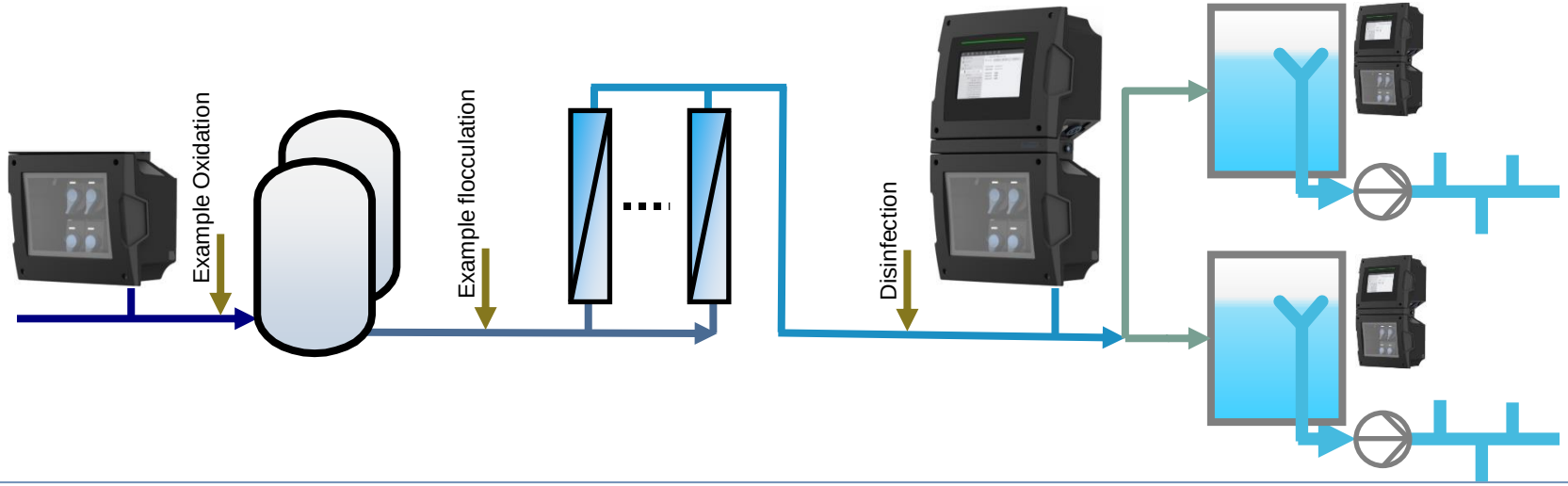
Pretreatment:
- Deacidification
- Oxidation
- Prefiltration
- ...

Filtration:
- Membrane-filtration
- Sandfilter
- …

Disinfektion:
- Chlorine, Chlorine dioxide
- UV-Disinfection
- ...

Storage:
- Watertower
- Storage basins
- Intermediate tanks
- …

Distribution:
- Pipe net
- Distribution lines
- …
- consumer

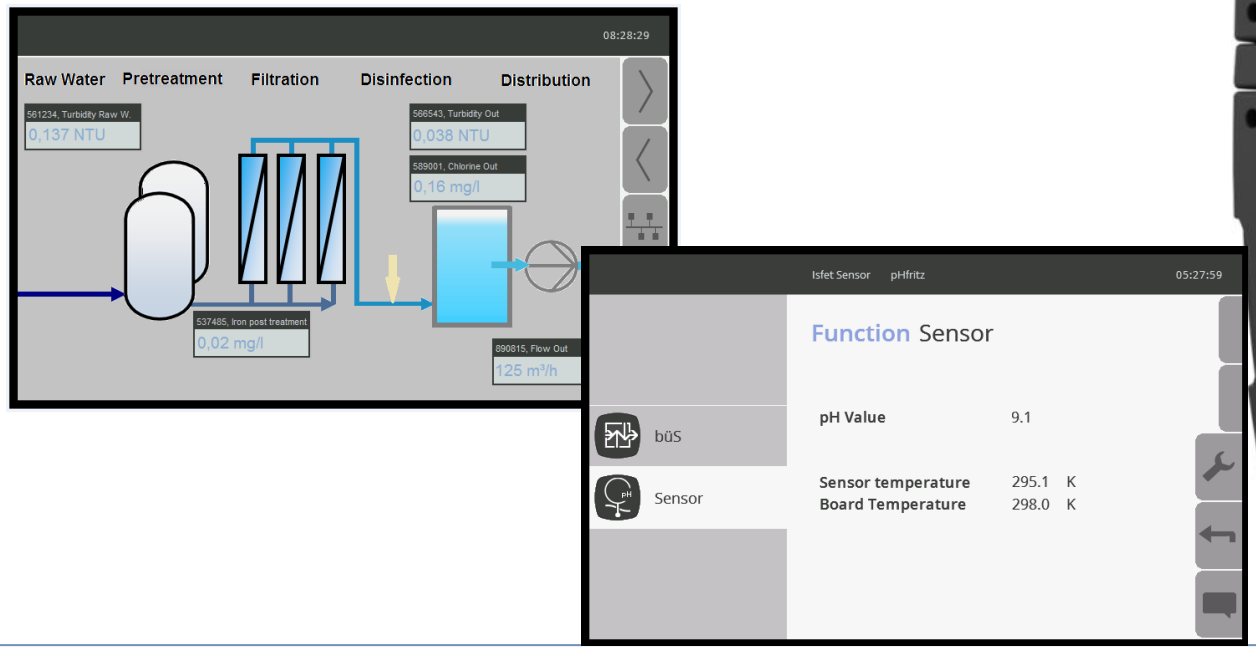


Multi parameter Water Quality Monitoring Sensors

- Continuous measurement of 30 or more measuring points
- Available parameters
  - Free Chlorine
  - Chlorine Dioxide
  - pH-Value
  - ORP-Value
  - Conductivity
  - Turbidity
  - Iron
  - SAC254 (TOC monitoring)
- Hot Swap function
- Plug & Play function of all modules and sensors thanks to bus communication
- Data logging

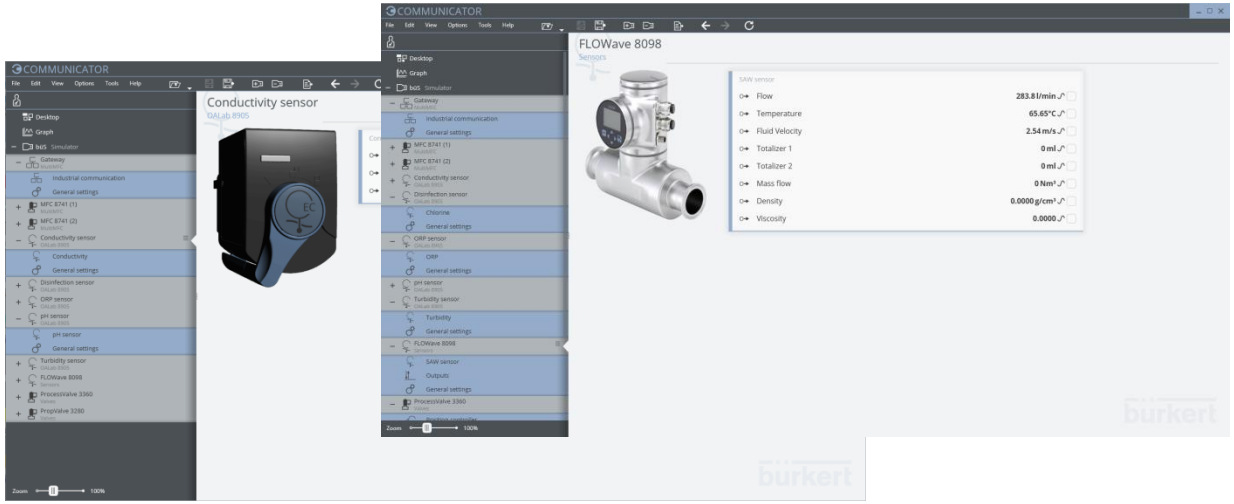
Multi parameter Water Quality Monitoring Touch screen 7“

- Field display
- Customized Views
- Maintenance
- Parameter setting
- Diagnosis



Multi parameter Water Quality Monitoring
Freeware „Communicator“

- Remote control
- Network settings
- Gateway configuration
- Parameter setting
- Diagnosis
- Maintenance



Multi parameter Water Quality Monitoring
Connection to PLC or other equipment

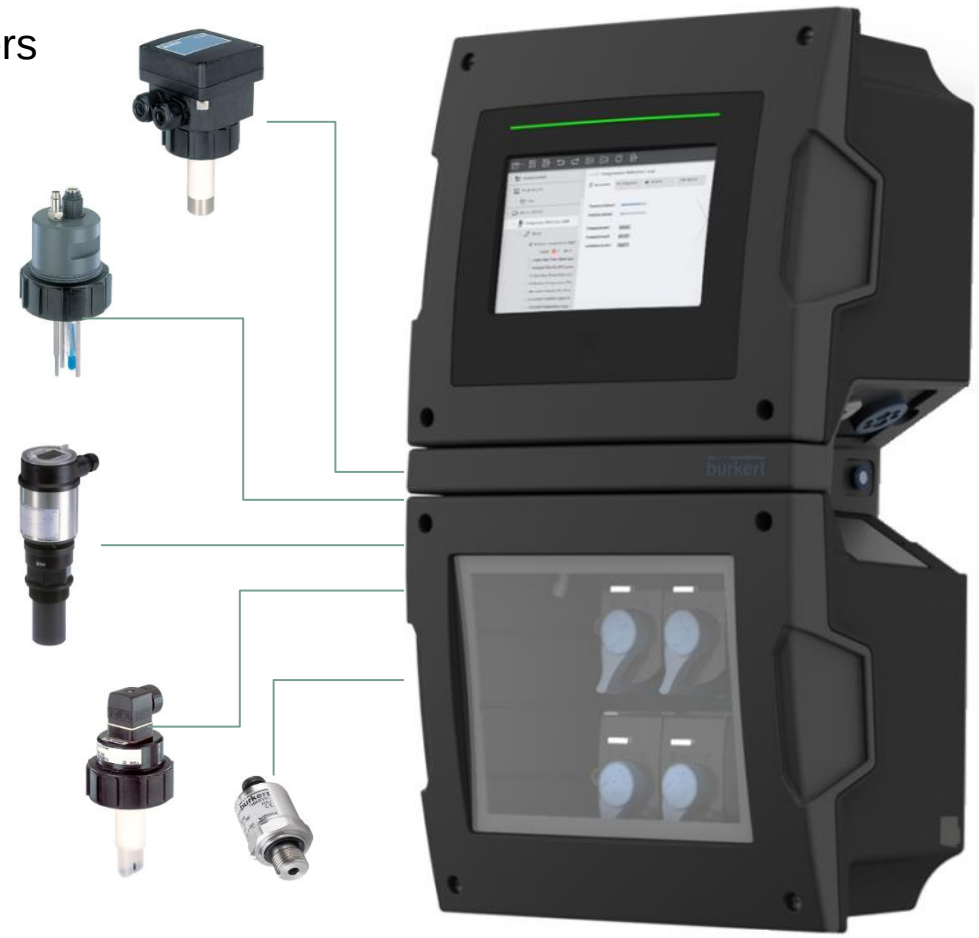
- Ethernet IP
- Modbus TCP
- ProfiNet
- ProfiBus
- Analog outputs 4-20mA, 0-5V, 0-10V
- Digital outputs

Coming next

- UMTS
- WLAN

Multi parameter Water Quality Monitoring analog/digital inputs

- Connection of other sensors/transmitters
  - **Flow**
  - **pressure**
  - **Level**
  - **Total Chlorine**
  - **Oxygene**
  - **Etc.**

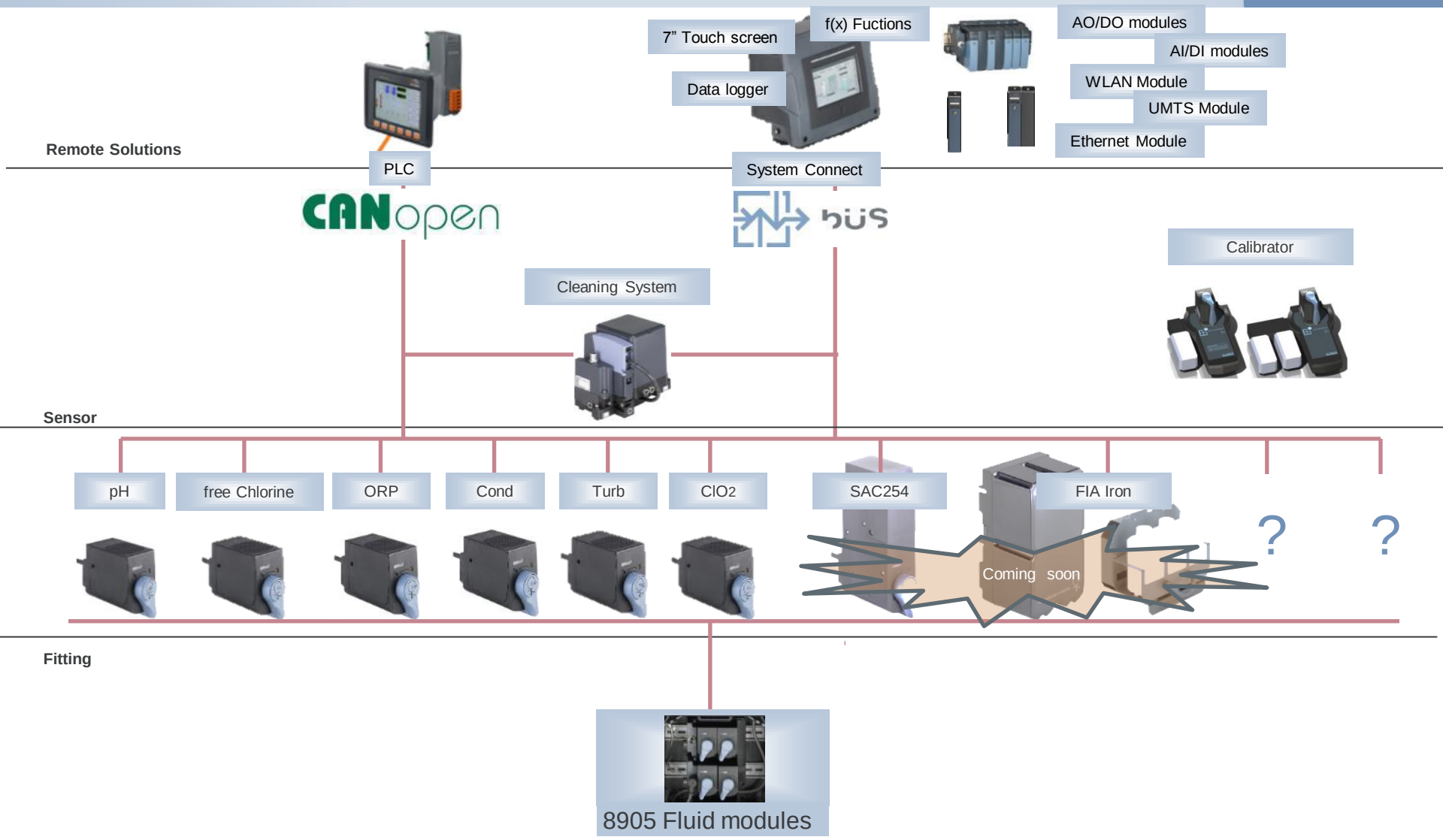


Multi parameter Water Quality Monitoring
Housing concepts

- Modular Standards housings

- Customized housings

8905 Clean water quality monitoring System
At a glance: Modular concept



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Sensor Cubes

8905

EDIP Platform Components
(Housing, Backplane…)

8905 Clean water quality monitoring System

Sensor Cubes

Electronics

System Connect Components

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Sensor Cubes

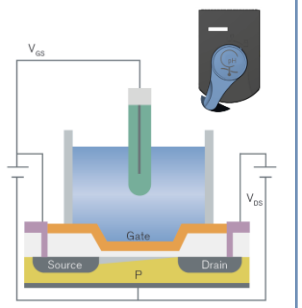
Accessories

8905 System Accessories

8905 Clean water quality monitoring System

Sensor Cubes

pH

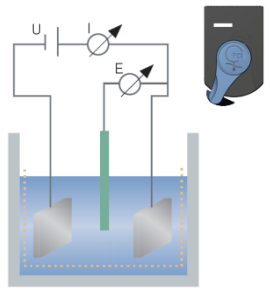


Sensor Cube
ISFET - pH Value

8905 Clean water quality monitoring System

Sensor Cubes

Chlorine



Sensor Cube
Amperometric S.
Chlorine

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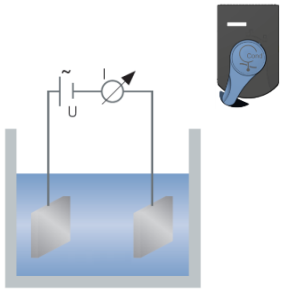
Sensor Cubes

Conductivity



Sensor Cube
Conductivity

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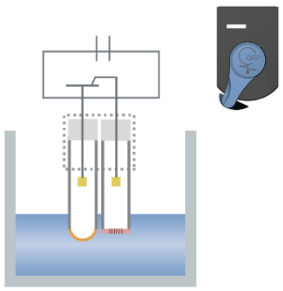
Sensor Cubes

ORP



Sensor Cube
ORP

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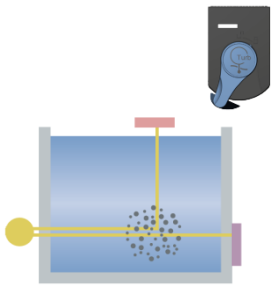
Sensor Cubes

Turbidity



Sensor Cube
Scattered Light
Turbidity

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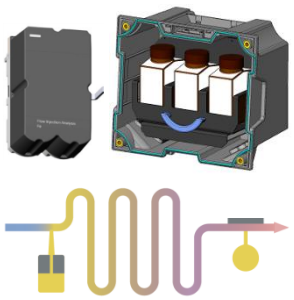
Sensor Cubes

Iron



Sensor Cube
Flow Injection
Analysis

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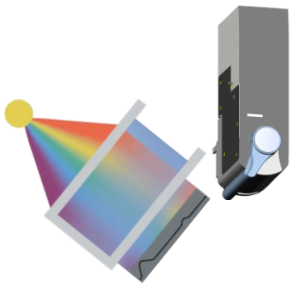
Sensor Cubes

TOC



Sensor Cube
Spectrometric S.

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Sensor Cubes

External

Sensors with 4-20 mA

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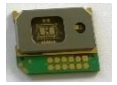
Sensor Cubes

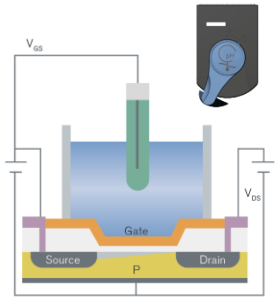
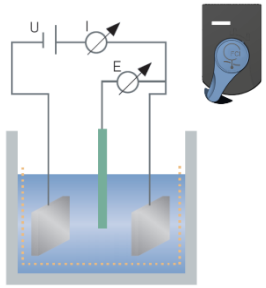
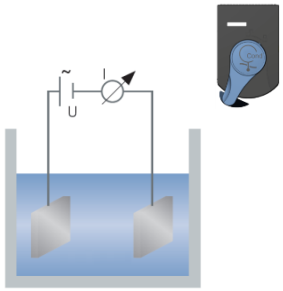
Wear/Spare

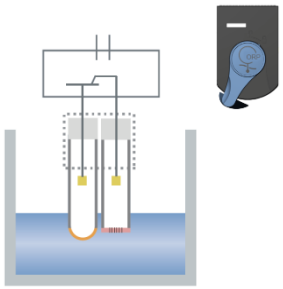
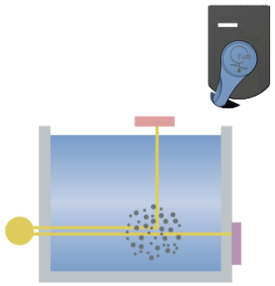
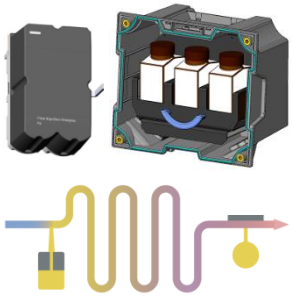
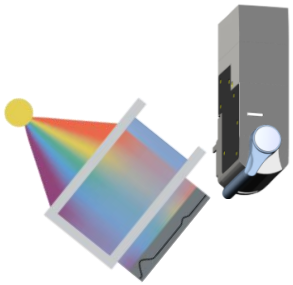
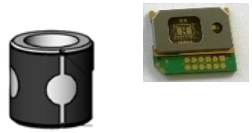


Cuvette, MEMS chip, KCl tank

8905 Clean water quality monitoring System

Sensor Cubes

8905	Electronics	Accessories	pH	Chlorine	Conductivity
					
EDIP Platform Components (Housing, Backplane…)	System Connect Components	8905 System Accessories	Sensor Cube ISFET - pH Value	Sensor Cube Amperometric S. Chlorine	Sensor Cube Conductivity

ORP	Turbidity	Iron	TOC	External	Wear/Spare
					
Sensor Cube ORP	Sensor Cube Scattered Light Turbidity	Sensor Cube Flow Injection Analysis	Sensor Cube Spectrometric S.	Sensors with 4-20 mA	Cuvette, MEMS chip, KCl tank

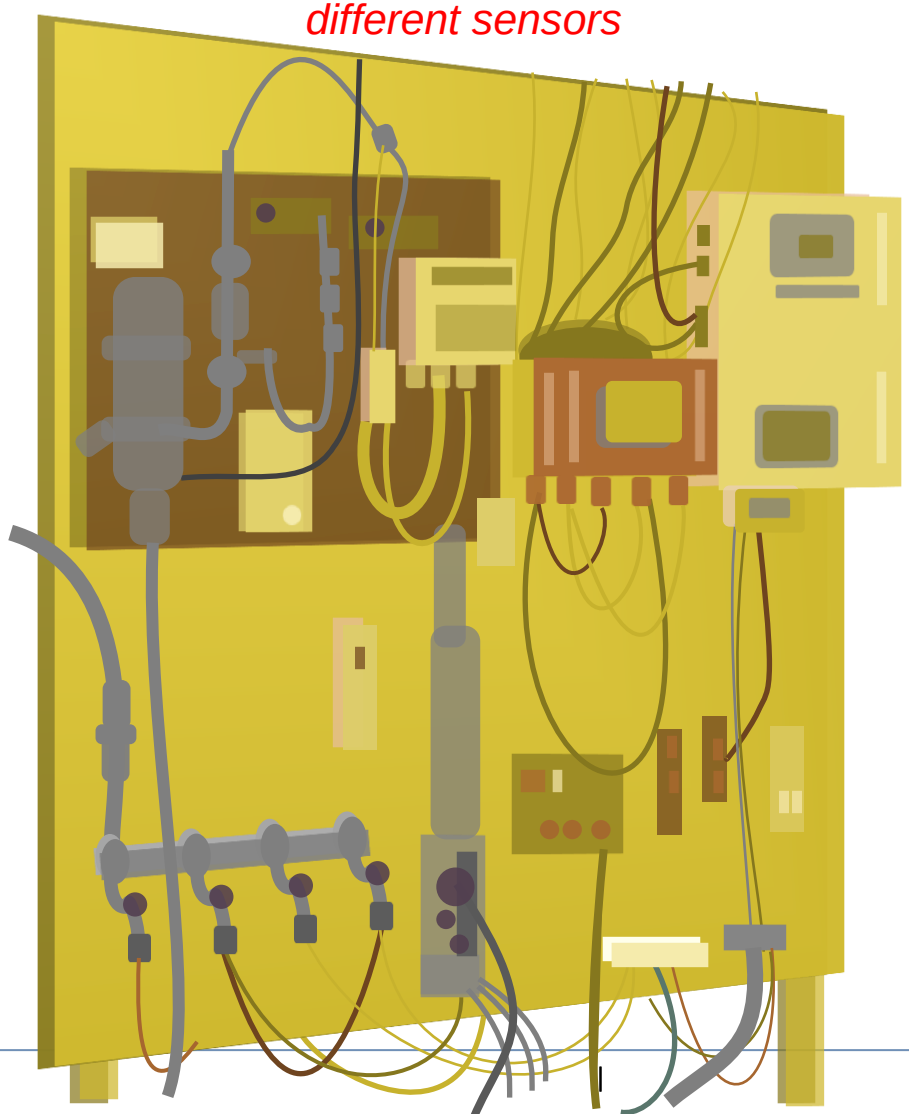
Multi parameter Water Quality Monitoring
Customer Benefits

Modular, Plug & Play

- **Quick and easy** Installation and Startup in the Field
- **Quick and easy** Upgrades

Multi parameter Water Quality Monitoring
Customer Benefits

A huge and growing wall with numerous different sensors



Small Footprint, Modular Design

- **Easy Integration** into new/present plants

vs.

One platform
with all important parameters!

Multi parameter Water Quality Monitoring
Customer Benefits

ONE System for All important water parameters

- **Easy Use** at Operations
- **Standardized Start Up** Routines
- I**ntuitive Use** of the System

Multi parameter Water Quality Monitoring
Customer Benefits

No reagents needed for most of the sensors

- **Low aditional Costs** for Maintenance and spare parts
- **Low Maintenance** Effort

Multi parameter Water Quality Monitoring
Customer Benefits

High automation level of the system

- **f(x) function** on board for decentralised timer, flow control
- **Cleaning system**
- **No/low maintenance** effort

Multi parameter Water Quality Monitoring
Customer Benefits

- **Small Time Effort for installation**
- **Small Time Effort for maintenance**
- **Low operations Costs**
- **High Reliability**

Instrumentation in drinking water plants
Oehringen, Germany

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Instrumentation in drinking water plants
Sensematt, Switzerland

Instrumentation in drinking water plants
Charlotte, USA

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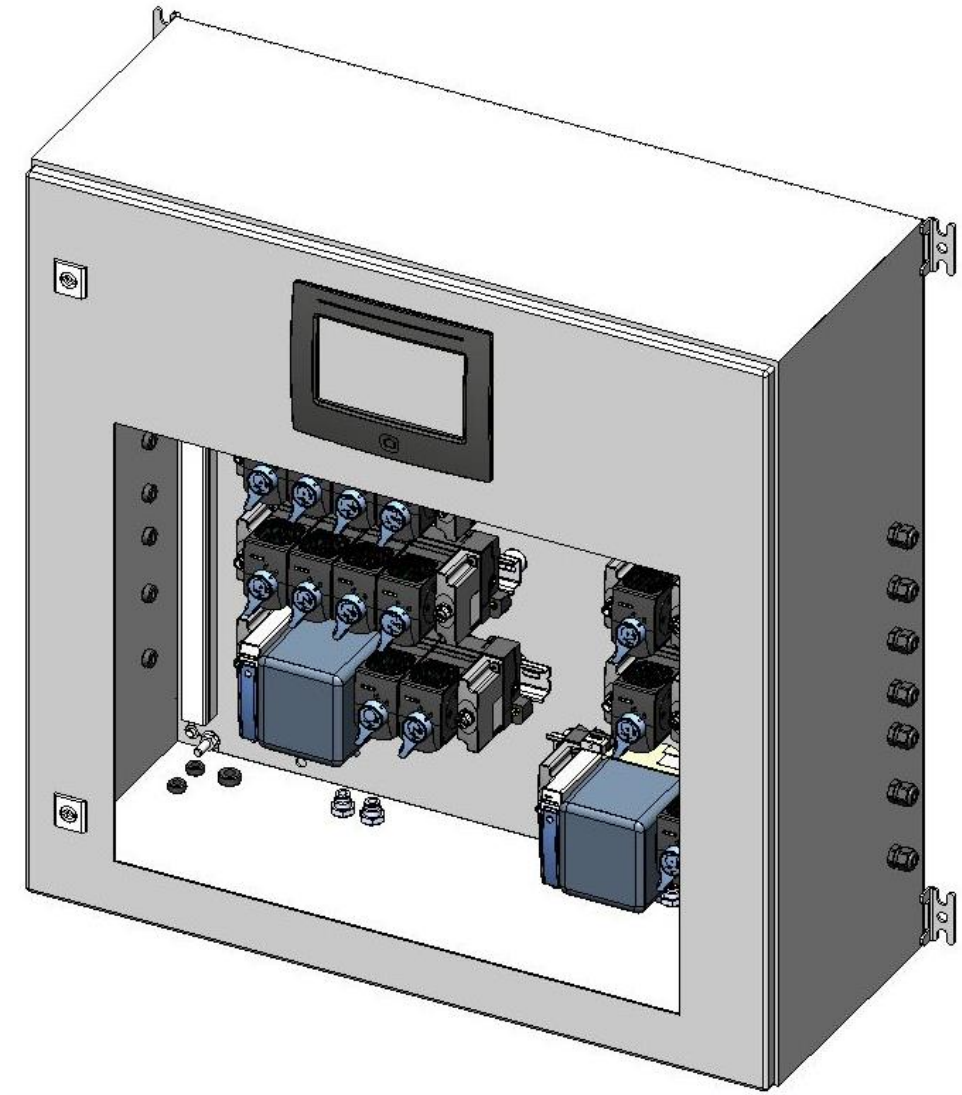
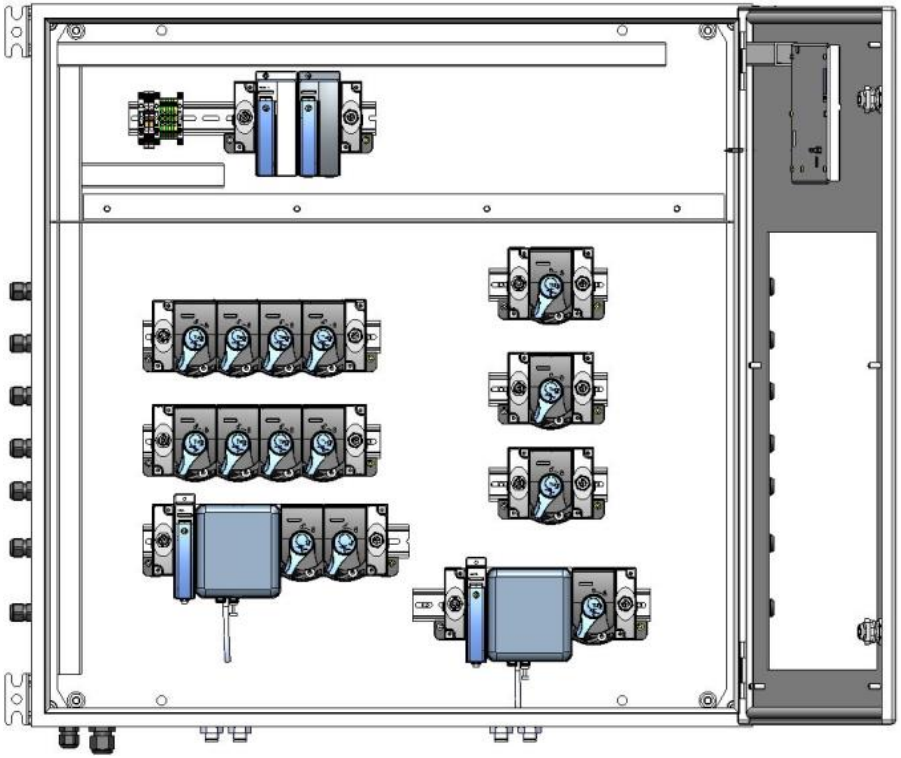
Instrumentation in drinking water plants
Space within a plant

Instrumentation in drinking water plants
8905 Customized layout





Do you have any

questions?

So…
as….

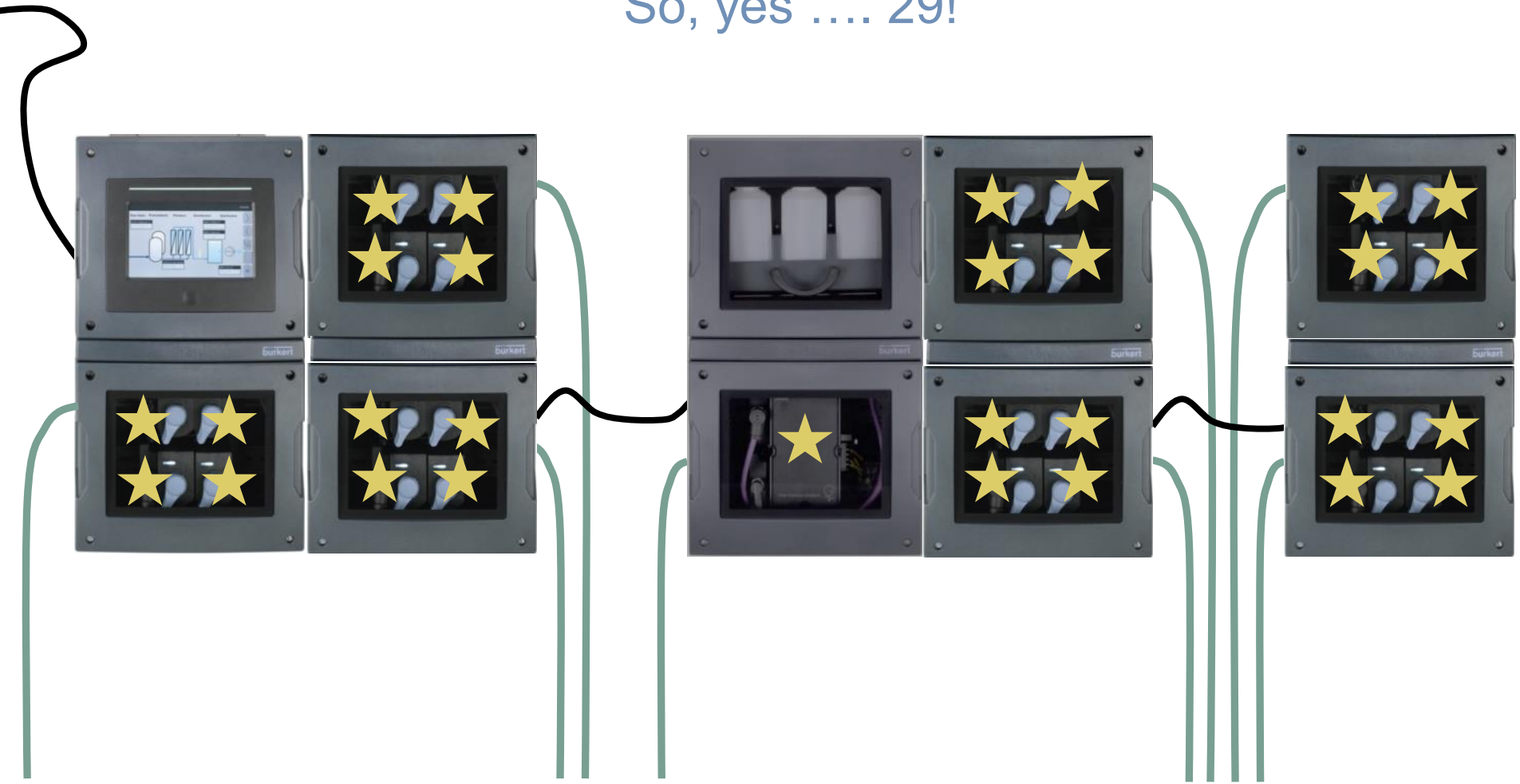
Up to 30 sensors cubes can be connected to one System connect

A Question for you…

How many sensors are connected at next page?

8905 Basic Setup

So, yes …. 29!



Thank You!

Christof Kundel
Field Segment Manager Water

We make ideas flow.

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