Type 8619

Multichannel Transmitter/Controller multiCELL for Flow and Analytical Sensors
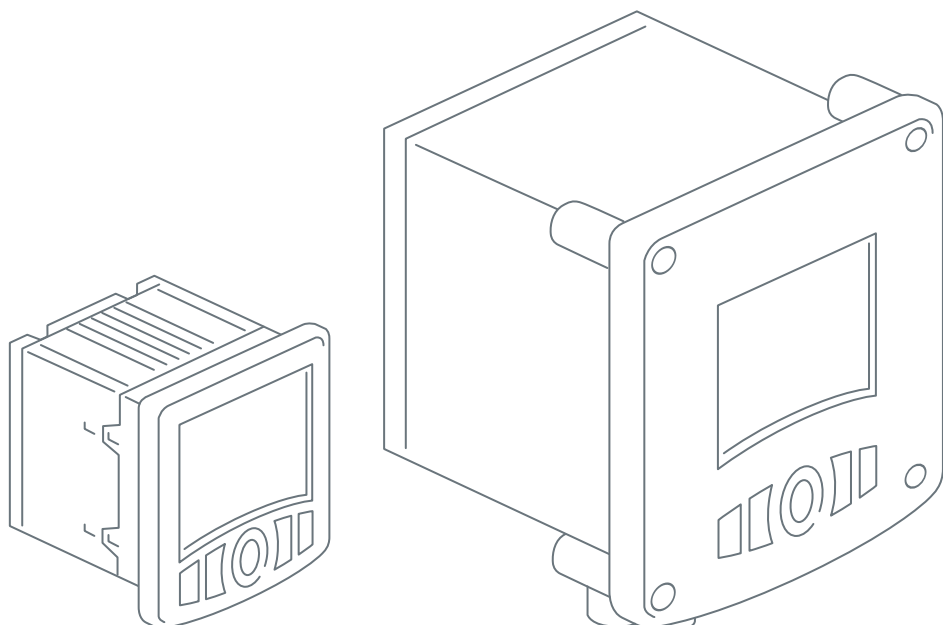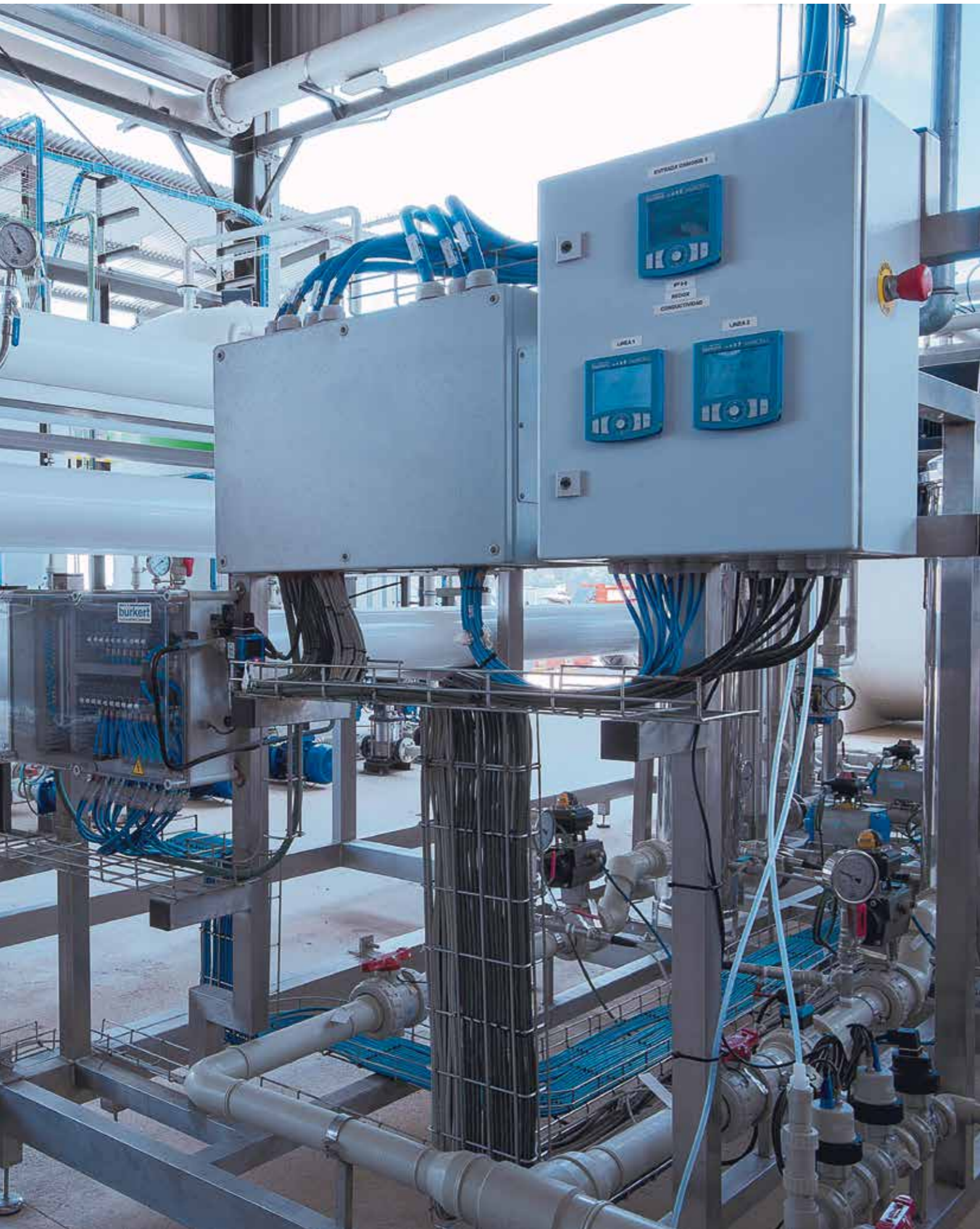
Product Features and Resulting Advantages

multiCELL

Modular multivariable remote transmitter/controller with multichannel inputs for different sensor types such as flow, pH, ORP, conductivity, free chlorine, etc. in a user defined arrangement.

General features, advantages, user benefits

Highly flexible modularity in hardware and software starting on a basic device up to a device with extended functionality and multichannel I/O capability.

Standard device

- Graphic display with adjustable backlight and user friendly dynamic softkey operation.
- Remote panel mount or wall mount housing. Separate kit available for mounting on pipes and for outer usage a weather roof is available as accessory.
- Wall mount version designd for usage in rough conditions. The full plastic housing has no outer metallic parts.
- Front-side access to all of the wall-mount housing's electrical connectors.
- Out of the box functions:
  - Flow measurement via pulse input
  - Information system, code access, control functionality, calculation formulas
  - Calibration at highest level, yet easy to use
  - Integrated test functions and simulation for each I/O channel offer fast start-up and minimum maintenance and allows process behaviour test at any time.
  - Device status diagnosis provides permanent device and sensor status and prevents frequent device checks.

Extended device Features

- Up to 6 I/O boards for additional analytical sensor connection and analogue and digital signals – factory built and pre configured.
- Defined optional reloadable software packages allow optimal adaptation to the required functionality in hardware and software at each measurement point. The price of the device is adjustable to what is required by the application.
- One device can be used for a wide range of applications, with the advantage of having to learn operation, handling and maintenance only once. Additionally, it is possible to reduce the number of variants in stock.
- Storing calibration data and min./max. measurement values allow transparency at specific passed production times.
- Multipoint data logging and data setting backup on SD card support date and time oriented transparency to process behaviour and quality and ensure maximum reliability and confidence in operation.

wall mount

panel mount

Modular Setup

Modular hardware concept

Components

- Housing & power supply:
- – panel mount with 12..36 V DC support
- – Wall mount housing with 12..36 V DC support
- – Wall mount housing with 110 / 230 V AC support and 24 V DC output

- Basic
- – Mainboard (2AO, 2DO, 2DI)
- – Carrier board
- – Big display
- – SD card slot

- Selectable boards
- – Input board for pH/ORP raw signal
- – Input board for conductivity raw signal
- – Input board (2AI, 2DI)
- – Output board (2AO, 2DO)

- Ready configured at the factory based on application requirements

Conductivity   pH/ORP   Input Board   Output Board
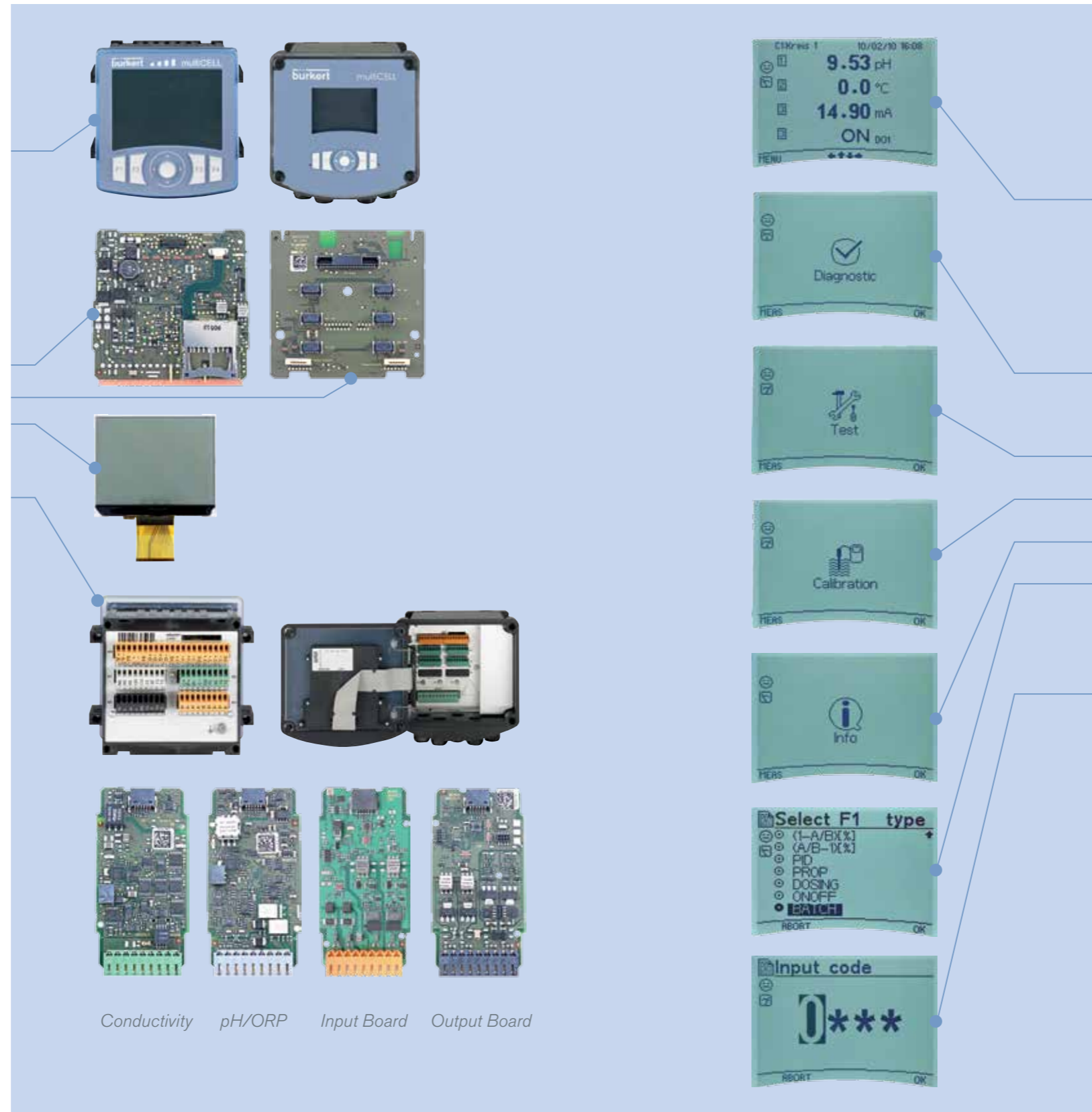
Modular software concept

Standard software

- For operation, configuration and parametrisation

- Standard and user configurable displays for data viewing

- Complete measurement functions

- Integrated ultrapure water temperature coefficient curve

- Device status diagnostics

- Maintenance and simulation

- Input/output tests

- Calibration

- Built-in information system

- Usage of built-in calculation formulas on freely selectable process variables

- Time and volume based dosing

- User access code

- Software procedure for Chlorine measurement (input board necessary)

Additional software packages

- Chemical dosing (e. g. cooling tower application)

- PID controller

- Data logging with date/time stamp and data storage on SD card

- Concentration tables dependent on temperature and conductivity for selected media

- Flow and analytical measurement in one device in parallel

Exemplary Applications

Cooling tower water treatment:

The multiCELL can be used as a modular solution for different complexity of treatment programs.
Among others for:

- A bleed and feed can be realised measuring the conductivity value
- Chemical dosing proportional to feed water flow
- Timer-based chemical dosing of up to two channels
- pH control of the cooling water is possible
- Flow circulation check ensures the function of the complete system

Drinking water:

- Quality monitoring of the water by measuring pH, ORP, conductivity, free chlorine
- Flow measurement for monitoring and control loops

Ultrapure water:

- Conductivity measurement of ultrapure water (UP) by using integrated special temperature compensation tables including flow measurement of UP water

Desalination:

- Quality monitoring of the water by measuring pH, ORP, conductivity including reverse osmosis (RO) membrane monitoring

Reverse Osmosis:

- pH adjustment to avoid scaling of the RO membrane
- ORP and free chlorine monitoring to check maximum chlorine rate for membrane protection
- Conductivity measurement (percentage reject feed-permeate) for RO membrane monitoring
- Flow measurement for control and monitoring of feed water

In a Bio Reactor the multiCELL allows:

- pH and ORP measurement and building control loops
- Pt100/Pt1000 inputs as additional measurement value
- Usage of multiple analogue outputs to monitor the important parameters in a fermentation process. (2 AO as standard, further outputs available with optional output board(s))
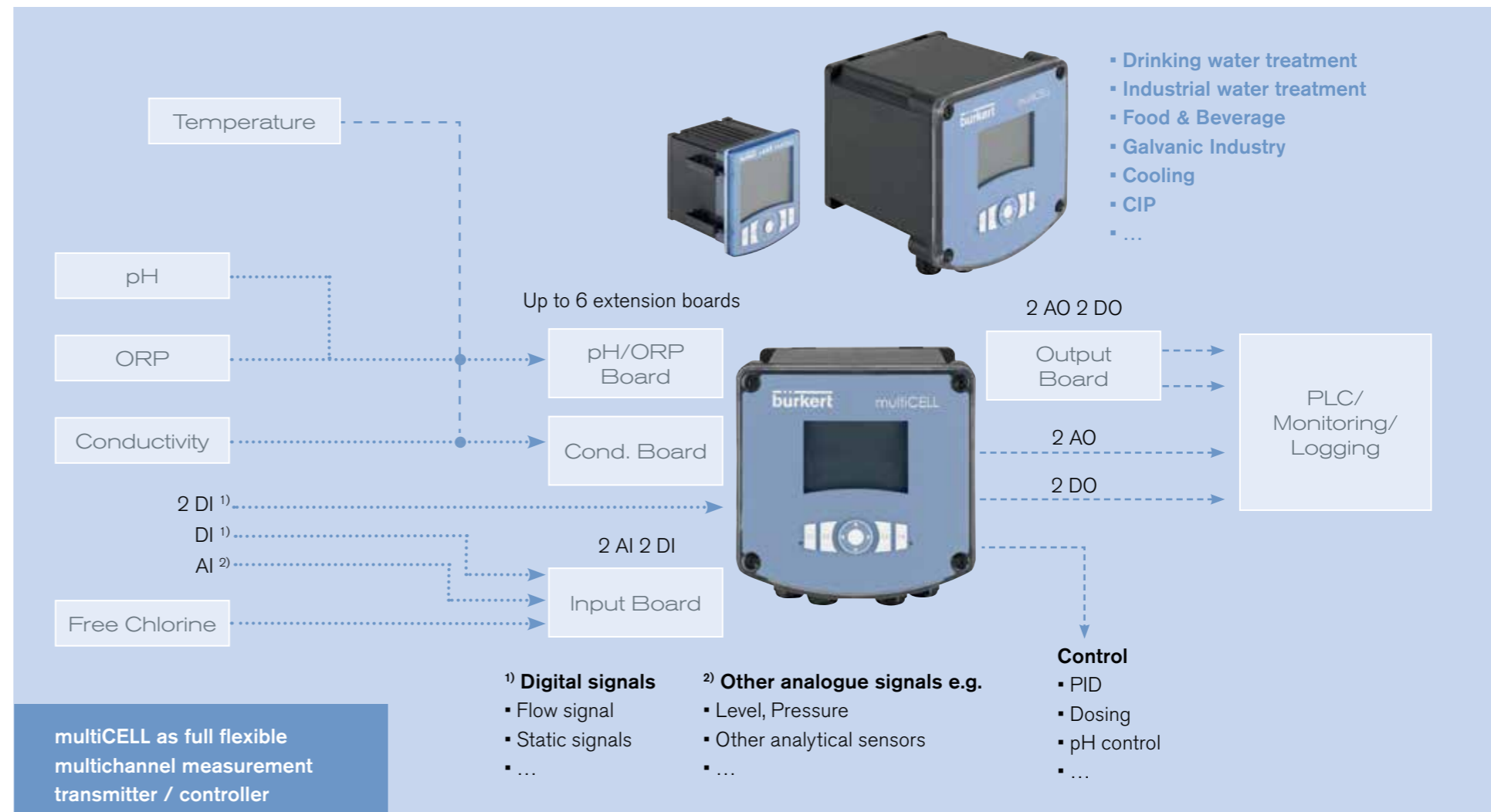
In Clean In Place processes the multiCELL can act
as one transmitter/controller for

- pH measurement on caustic and/or acids
- conductivity measurement to ensure the installation is cleaned
- outputs to monitor the valves

Desinfection processes

- Measurement of Free Chlorine, pH and/or ORP
- Flow measurement in the main pipe for ensuring the right dosing of the desinfectant
- Multiple analogue and digital outputs for SPS, dosing pumps and/or valves

- Drinking water treatment
- Industrial water treatment
- Food & Beverage
- Galvanic Industry
- Cooling
- CIP
- …

Temperature

pH

ORP

Conductivity

2 DI [1]

DI [1]

AI [2]

Free Chlorine

Up to 6 extension boards

pH/ORP Board

Cond. Board

2 AI 2 DI

Input Board

2 AO 2 DO

Output Board

2 AO

2 DO

PLC/ Monitoring/ Logging

Control
- PID
- Dosing
- pH control
- …

[1] **Digital signals**
- Flow signal
- Static signals
- …

[2] **Other analogue signals e.g.**
- Level, Pressure
- Other analytical sensors
- …

multiCELL as full flexible multichannel measurement transmitter / controller

AI 4..20 mA / 0..5 V / 0..10 V Input
AO 4..20 mA Output
DI Digital Input
DO Digital Output

bürkert
FLUID CONTROL SYSTEMS