



pH Sensor Cube

- Fully compatible with büS systems and a wide range of further analysis sensor cubes
- Sensor: MEMS ISFET technology
- Modular sensor cube for hot swap (exchange during operation)
- Minimal sample water flow needed
- Available in 2 versions: standard and with drinking water approval (ACS)

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with



Type 8905 ▶
Online Analysis System



Type 8920 ▶
Bürkert Communicator

Type description

The device is a pH measurement sensor. It is used within the Online Analysis System Type 8905 by being plugged into a spare fluidic backplane slot.

The pH value is the most common parameter in water analysis. The pH sensor cube contains an ISFET measuring cell, based on microelectromechanical systems technology (MEMS) to measure the pH value.

The electrical and fluidic connections are made via the connection panel of the system. The sensor cube communicates with the system via büS, allowing fully automatic login to the online analysis system. If the sensor is plugged into the system, it automatically logs on to the büS and can be parameterised according to customer requirements.

The Sensor-Cube is available in 2 versions. The standard version provides protection against biological growth at the reference electrode and is recommended for applications with no or very low chlorine in the water. The drinking water version is without anti-fouling equipment and is mainly required in applications with drinking water approval.



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1. General technical data

| Product properties | |
|---|--|
| Material | |
| Please make sure the device materials are compatible with the fluid you are using. Detailed information can be found in chapter "2.1. Chemical Resistance Chart – Bürkert resistApp" on page 4. | |
| Housing | PPE+PS |
| Lever | Zamak, painted |
| Seals | EPDM |
| Dimensions | Detailed information can be found in chapter "3. Dimensions" on page 5. |
| pH sensor | ISFET (Ion Sensitive Field Effect Transistor) |
| Temperature sensor | Pt1000 Class B |
| Electrolyte (reference electrode) | <ul style="list-style-type: none"> Standard version: Ag/AgCl, 3 mol KCl with biocide for use without chlorine (<0.2 ppm) Drinking water version: Ag/AgCl, 3 mol KCl without biocide |
| Compatibility | With Online Analysis System Type 8905 (the electrical and fluidic contact is made via backplane system.) Detailed information can be found in the data sheet of the online analysis system, see data sheet Type 8905 ▶ for more information. |
| Measuring range | pH 4...pH 9 (further measuring ranges on request) |
| Maintenance | 12 months nominal, depending on the water quality |
| Performance data | |
| pH measurement | |
| Measuring range resolution | pH 0.02 |
| Measurement deviation | ± pH 0.1 |
| Linearity | ± pH 0.05 |
| Repeatability | ± pH 0.05 |
| Response time (t_{90}) | < 10 s |
| Temperature measurement | 0...+50 °C (+32...+122 °F) |
| Electrical data | |
| Operating voltage | 24 V DC through the backplane of the system Type 8905 via bÜS |
| Power consumption | 0.8 VA |
| Media data | |
| Fluid | <ul style="list-style-type: none"> Water without particles: drinking water, industrial water Conductivity $\geq 100 \mu\text{S/cm}$ For Cl < 0.2 ppm use antifouling cartridge |
| Sample water | |
| Temperature | +3...+40 °C (+37...+104 °F) |
| Pressure | PN3 |
| Flow rate | >6 l/h |
| Process/Port connection & communication | |
| Process connection | Via pinch valve in the fluidic backplane of the Type 8905 Detailed information can be found in the data sheet of the Online Analysis System, see data sheet Type 8905 ▶ for more information. |
| Electrical connection | Spring contacts in the fluidic backplane of the Type 8905, which is connected to a bÜS System Detailed information can be found in the data sheet of the Online Analysis System, see data sheet Type 8905 ▶ for more information. |
| Data transfer | |
| Internal communication | Through bÜS (Bürkert bus, CANopen protocol) |
| External communication by status LED | According to NAMUR NE 107 |
| Approvals and Certificates | |
| Standards | |
| Protection class according to IEC/EN 60529 | <ul style="list-style-type: none"> IP65, when plugged in the fluidic backplane IP20, as standalone product |

Directives

CE directives

The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable).

Environment and installation

Ambient temperature

Operating

0...+40 °C (+32...+104 °F)

Storage and transport

For empty/purged sensor cube

- -10...+60 °C (+14...+140 °F) without the reference electrode
- +3...+40 °C (+37...+104 °F) with the reference electrode

Relative air humidity

≤90 %, without condensation

Height above sea level

Max. 2000 m

Operating condition

Continuous

Equipment mobility

Fixed

Application range

Indoor and outdoor (Protect the device against electromagnetic interference, ultraviolet rays and, when installed outdoors, against the effects of climatic conditions)

Installation category

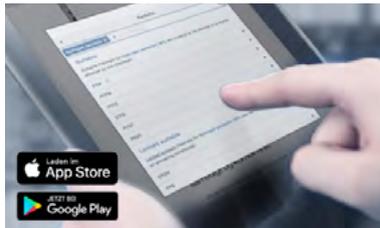
Category I according to UL/EN 61010-1

Pollution degree

Degree 2 according to UL/EN 61010-1

2. Materials

2.1. Chemical Resistance Chart – Bürkert resistApp



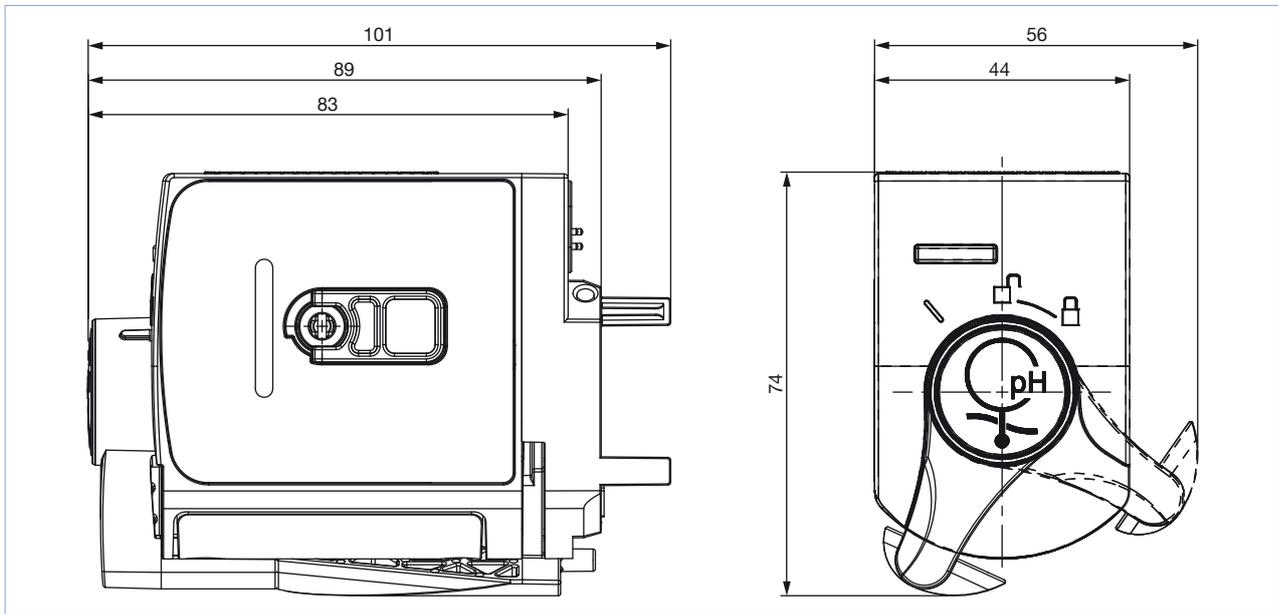
Bürkert resistApp – Chemical Resistance Chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

[Start Chemical Resistance Check](#)

3. Dimensions

Note:
Dimensions in mm



4. Product installation

4.1. Installation notes

Note:

- The sensor cube is designed for use with the online analysis system, Type 8905. The sensor cube is simply plugged into the backplane in Type 8905.
- It is also possible to mount the backplane individually on a DIN rail.

See **data sheet Type 8905** ▶ Online Analysis System for more information.

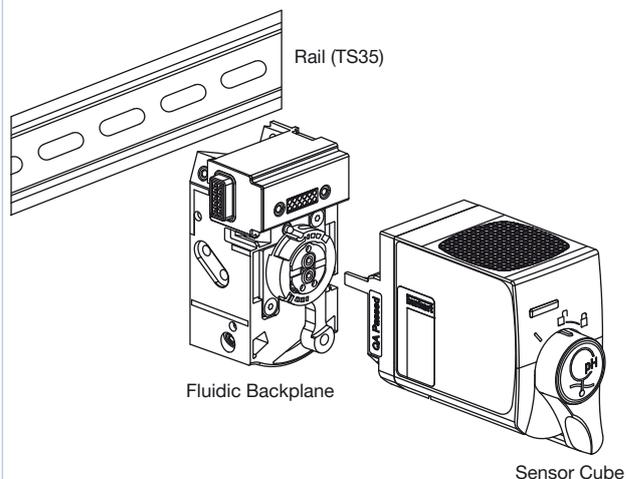
Installation examples

Product mounted in a housing for the Online analysis system Type 8905.

- pH sensor cube Type MS01
- Housing Type 8905 with display Type ME21 and controller Type ME25

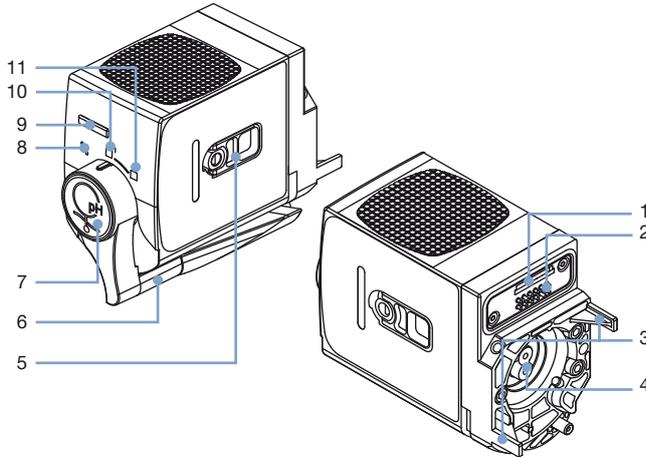


Product without housing mounted on the backplane on standard rail (TS35).



5. Product design and assembly

5.1. Product features



Product without housing

| No. | Element |
|-----|---|
| 1 | Slot micro-SIM card (for configuration data) |
| 2 | Electrical interface |
| 3 | Guide pins |
| 4 | Fluid connections |
| 5 | Lever to: <ul style="list-style-type: none"> lock / unlock the product carry out maintenance operations |
| 6 | Housing of the external reference electrode |
| 7 | Push button for unlocking |
| 8 | Maintenance position |
| 9 | Sensor cube Status LED |
| 10 | Unlocked position |
| 11 | Locked position |

6. Ordering information

6.1. Bürkert eShop – Easy ordering and quick delivery



Bürkert eShop – Easy ordering and fast delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

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6.2. Bürkert product filter



Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.

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6.3. Ordering chart

Note:

The pH sensor cube must be operated within a system.

Please refer to the order information for Online Analysis System Type 8905, see **data sheet Type 8905** ▶ or contact your Bürkert representative.

| Description | Article no. |
|---|--|
| pH sensor cube | |
| Drinking water version (without anti-fouling), ACS approval | 567624  |
| Standard version (with anti-fouling) | 570691  |

6.4. Ordering chart accessories

| Description | Article no. |
|---|--|
| Buffer solution, 50 ml | |
| pH 5 (+20 °C) | 806698  |
| pH 7 (+20 °C) | 806699  |
| pH 9 (+20 °C) | 806700  |
| Reference electrode | |
| Drinking water version (without anti-fouling) | 563705  |
| Standard version (with anti-fouling) | 570699  |
| Replacement part set | |
| Measurement cell | 568038  |

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For up-to-date addresses
please visit us at
www.burkert.com

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