DATA SHEET

Type MS06

bürkert
FLUID CONTROL SYSTEMS

Flow injection analysis (FIA) sensor cube for iron content

- Fully automated water sampling with adjustable analysis interval
- Miniaturised for a compact system design
- Economical consumption of reagents
- Fully compatible with büS systems and a wide range of further analysis sensor cubes

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 8922 ▸
Graphical programming

Type MZ30 ▸
Reagent unit

Type description

Bürkert has developed an FIA (flow injection analysis) module for the measure of dissolved iron (Fe^{2+}/Fe^{3+}) for use in the online analysis system, which combines all necessary components including control in a minimum of space.

The special feature of Bürkert's FIA module is its consequent miniaturisation using microfluidic components. FIA has been used in laboratories for many years for quantitative analyses. With the FIA module, the method can now be used for the first time as a field device and continuously monitor the iron content of a measuring point.

In the flow injection analysis, the reagent is added to a water sample via a pump. The microfluidic mixing section after injection ensures uniform and complete mixing.
The measuring liquid then passes through a photometer, which measures the absorption over time. From the detected peak-shaped signal, the iron content can be determined photometrically and is then available for the control, monitoring and documentation of the water treatment.

Miniaturisation of the measuring unit and compatibility to all EDIP modules enable use in the Online Analysis System Type 8905. By plugging it into the fluidic backplane slot, the electrical and fluidic connections are made via the connection panel of the system. The measuring module communicates with the system via büS, allowing fully automatic login to the online analysis system. If the iron measuring module is plugged into the system, it is included in the list of büS members and further adaptations to customer requirements can be made.

powered by EDIP büS

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Visit product website ▸

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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 5.	
Housing	Polycarbonate
Backplane	Anodized aluminium
Lever	Stainless steel
Wetted parts	EPDM, FKM, NBR, PMMA, PEEK
Valve	FFKM
Seals	EPDM, FKM or NBR
Dimensions	Detailed information can be found in chapter "3. Dimensions" on page 5.
Weight	1.05 kg
Measuring principle	Flow injection analysis (dissolved iron) with photometric detection
Temperature sensor	Pt1000
Compatibility	With Reagent unit Type MZ30 and Online Analysis System Type 8905 Detailed information can be found in the data sheet of the reagent unit and of the online analysis system, see **data sheet Type MZ30** ▸ and **data sheet Type 8905** ▸ for more information.
Measuring range	0…2 mg/l - higher range on request (max. 10 mg/l)
Maintenance	
Calibration period	Automatic or manual
Waste	Error on waste full
Exchange of reagents	Depends on analysis interval
Performance data	
Minimum detection limit	0.02 mg/l
Measuring range resolution (internal)	0.001 mg/l at 0.05 mg/l 0.01 mg/l at 10 mg/l
Measurement deviation	±0.05 mg/l or 5 %
Linearity	±3 % of full scale
Repeatability	±3 % of full scale
Measuring cycle time	Minimum 60 min.
Electrical data	
Operating voltage	24 V DC through the backplane of the system Type 8905 via büS
Power consumption	2.2 (Standby)…12.7 W
Medium data	
Fluid	Water without particles: drinking water, industrial water
pH range	pH 4…pH 9
Sample water	
Temperature	+10…+40 °C (+50…+104 °F)
Pressure	1 bar max.
Flow rate	>6 l/h
Filter	≤100 µm
Fluid consumption	
Typical cycle numbers per 250 ml bottle (depending on analysis settings)	• Reagent solution: 4500 • Cleaning solution: 1000 • Calibration standard solution: 8000
Sample volume per analysis	Approx. 5 ml
Supplies	Reagent, cleaning and calibration standard solution Detailed information can be found in the data sheet of the reagent unit, see **data sheet Type MZ30** ▸ for more information.
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 t the Online Analysis System, see **data sheet Type 8905** ▸ for more information.

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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 t 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	
Degree of protection according to IEC/EN 60529	• 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	+10…+40 °C (+50…+104 °F), 20 °C (+68 °F) recommended
Storage and transport	• Used iron measuring module: +10…+30 °C (+50…+86 °F) • For empty/purged sensor cube: -10…+60 °C (+14…+140 °F)
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

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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

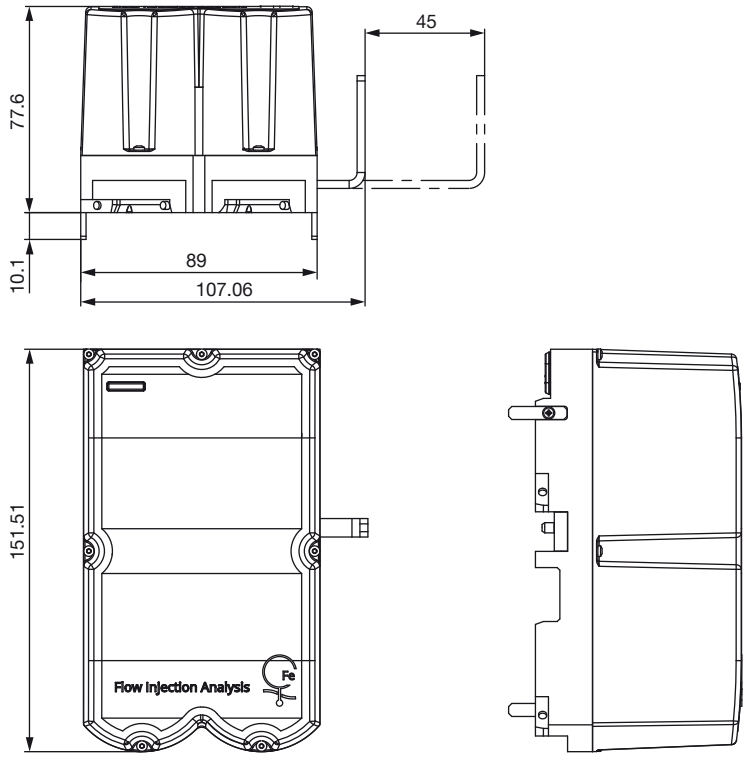
3. Dimensions

The product is available in two versions:

- Without housing for Type 8905
- Mounted in a housing for Type 8905

3.1. Dimensions of the product without housing for Type 8905

Note:
Specifications in mm



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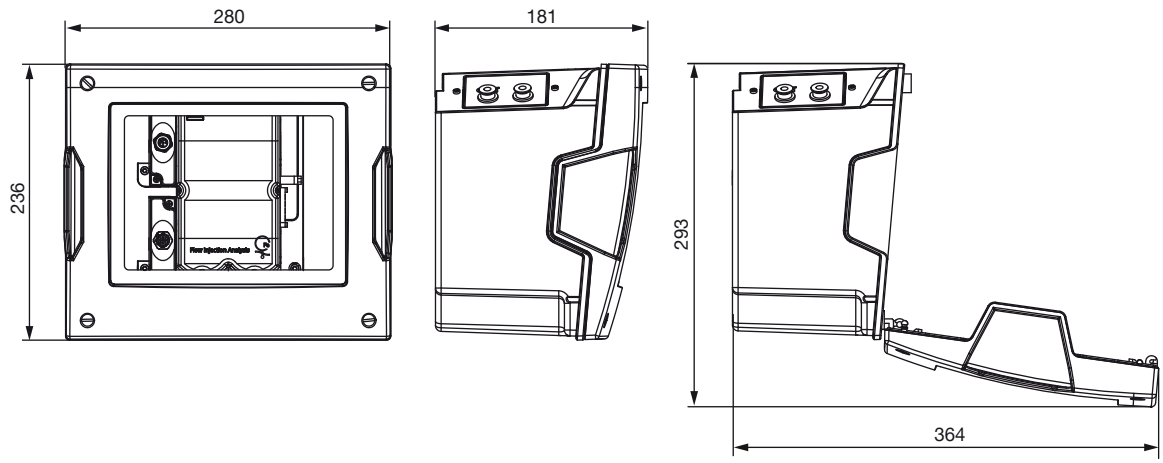
3.2. Dimensions of the product mounted in a housing for Type 8905

Note:
Specifications in mm

See **data sheet Type 8905** ▶ for more information.



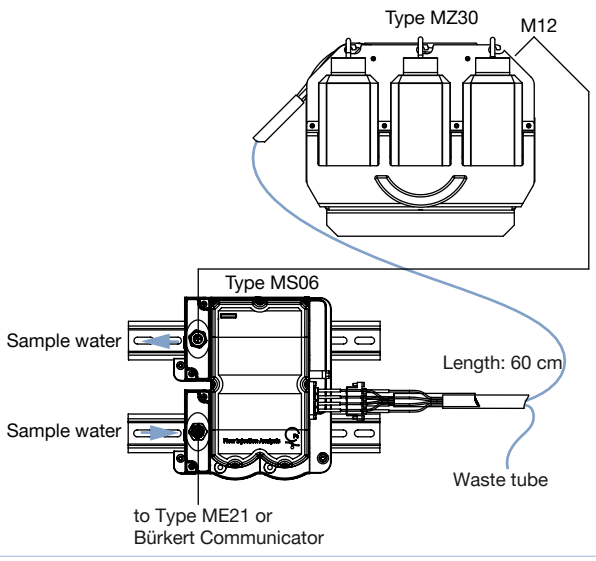
4. Product installation

4.1. Installation notes

Note:

- The iron measurement with Type MS06 is designed for use with the online analysis system, Type 8905. The iron measuring module is simply plugged into the backplane of the Type 8905.
- If the product is supplied without housing, it can be mounted on a backplane combination and the backplanes are installed on a standard rail (TS35).
- In order to supply the device with the necessary reagents, an MZ30 module is used.

See **data sheet Type 8905** ▶ Online Analysis System, **data sheet Type MZ30** ▶ Reagent unit for more information.

Installation example	
Product mounted in a housing for the Online analysis system Type 8905 • Iron measuring module Type MS06 + Reagent unit Type MZ30 • Housing Type 8905 with display Type ME21 and controller Type ME25 	**Product without housing mounted of the backplanes on two standard rails (TS35)** 

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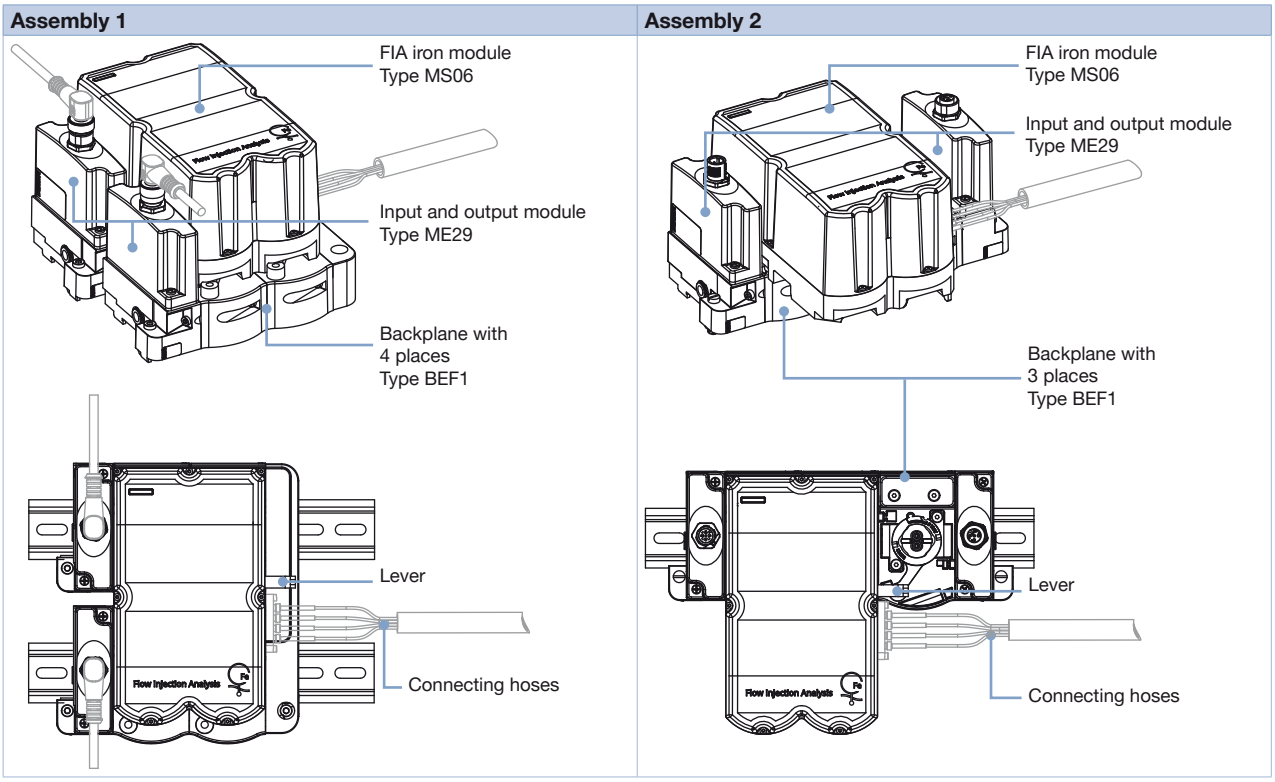
4.2. Mounting options

The iron measuring module MS06 is installed onto a backplane of the Type 8905 (at least 4 places necessary or alternatively 3 places in series (one empty space)).
To do this, the lever is pushed to the right, the device is set up and then the lever is locked to the left. The electrical as well as the fluidic connection is thereby established and the sensor module iron measuring module is mechanically locked on the backplane. In order to supply the device with the necessary reagents, an MZ30 module is used. The connection between the reagent bottles and the iron measuring module is realized by connecting hoses with a preassembled connector. An appropriate connection is provided on the MS06 iron measuring module.



5. Product operation

5.1. Measuring principle

Only for sampling, which is performed in user-defined time intervals, a partial stream is taken from the measuring water flow. The sample is processed separated from the main stream in the iron measuring module. A reagent is injected which, upon reaction with iron, forms a dye. For the determination of the iron content in the sample, the light absorption is used. After the analysis, the sample is discarded into the waste and the iron measuring module waits for the next measurement cycle, according to the user-defined time interval.

Operation is performed via the 7" display of the connected online analysis system, Type 8905 or if the product is delivered without display via ME21 or Bürkert Communicator.

The supplies of the operating agents (reagent, cleaning agent and calibration standard) are provided and monitored through the MZ30 module. The MZ30 module provides messages or warnings, e.g. when a reagent bottle needs to be replaced or will expire (the operating agents have a limited shelf life; the expiration date appears on the bottles).

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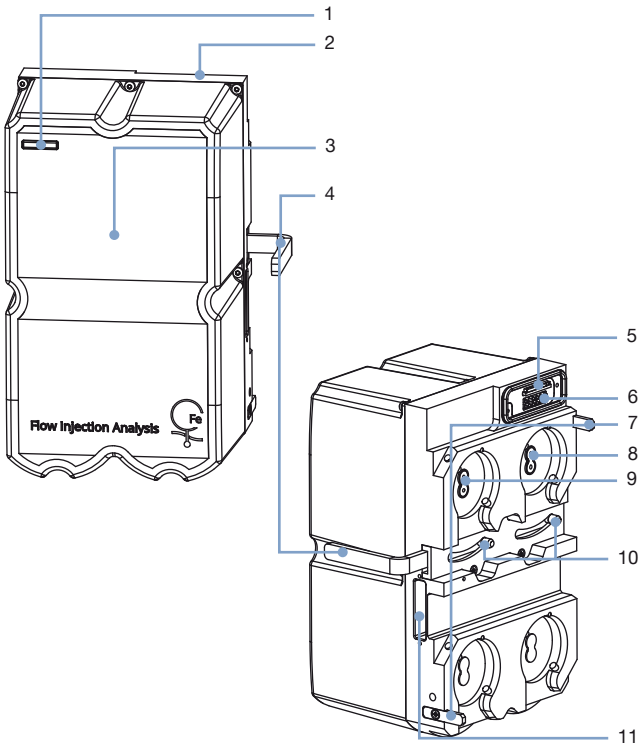
6. Product design and assembly

6.1. Product features



Product without housing for the Type 8905

No.	Element
1	Product status LED
2	Base plate
3	Product housing
4	Lever
5	Slot for configuration memory
6	Electrical interface
7	Adapter pins
8	Fluid bypass
9	Fluid interface
10	Pins to engage and activate the bayonet lever on the backplane
11	Fluidic interface of reagent hoses from MZ30 module

7. Ordering information

7.1. 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.

Order online now

7.2. 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.

Try out our product filter

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7.3. Ordering chart

Note:
The product must be used with the reagent unit, Type MZ30.

See **data sheet Type MZ30** ▸ for more information.

Description	Article no.
MS06 combinations for use in Online analysis system, Type 8905	
Reagent unit MZ30 + Iron measuring module MS06, for wall-mounting or into control cabinet	567638
Reagent unit MZ30, mounted in housing + Iron measuring module MS06	567637
Reagent unit MZ30 + Iron measuring module MS06, both mounted in Type 8905 housings	567636
Reagent unit MZ30 (without electronics) + Iron measuring module MS06, for wall-mounting or into control cabinet	569063
Reagent unit MZ30 (without electronics), mounted in housing + Iron measuring module MS06	569062
Reagent unit MZ30 (without electronics) + Iron measuring module MS06, both mounted in Type 8905 housings	569061

7.4. Ordering chart accessories

Description	Article no.
Fe Reagent solution, 250 ml For detailed information, please refer to the safety data sheet; see **Reagent solution data sheet** ▸	807613
Fe Cleaning solution, 250 ml For detailed information, please refer to the safety data sheet; see **Cleaning solution data sheet** ▸	807614
Fe Calibration standard solution, 250 ml For detailed information, please refer to the safety data sheet; see **Calibration standard solution data sheet** ▸	807615

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