

## Type MZ15

Handheld calibration tool / Handheld cleaning tool  
Tragbares Kalibrierwerkzeug / Tragbares Reinigungswerkzeug  
Outil d'étalonnage portatif / Outil de nettoyage portatif



## Operating Instructions

Bedienungsanleitung  
Manuel d'utilisation

We reserve the right to make technical changes without notice.  
Technische Änderungen vorbehalten.  
Sous réserve de modifications techniques.

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## 1 OPERATING INSTRUCTIONS

The Operating Instructions describe the entire life cycle of the product. These instructions should be kept within easy access at the place of use.

### Important safety information!

- ▶ Read these Operating Instructions carefully.
- ▶ Pay particular attention to the safety information, intended use and operating conditions.
- ▶ Persons working with the product must read and understand these Operating Instructions.

### 1.1 Definition of terms

In these Operating Instructions, the term "product" refers to the following versions of tool type MZ15:

- Portable calibration tool for sensor cubes of the type 8905 on-line analysis system
- Portable cleaning tool for sensor cubes of the type 8905 on-line analysis system

In these Operating Instructions, the term "system" refers to the type 8905 on-line analysis system

### 1.2 Symbols used



#### DANGER

- Warns against an imminent danger.
- ▶ If ignored, death or serious injury will result.



#### WARNING

- Warns against a potentially dangerous situation.
- ▶ If ignored, serious injury or death may result.



#### CAUTION

- Warns of possible danger.
- ▶ If ignored, substantial or minor injuries may result.

#### NOTICE

Warns against material damage.



Important advice and recommendations.



Refers to information in the Operating Instructions or in other documents.



Indicates an instruction to avoid a hazard.



Indicates a procedure that must be carried out.



Indicates a result.



Representation for software interface texts.

## 2 INTENDED USE

Use of this product that does not comply with the instructions could present risks to people and the environment.

The product in the calibration tool version is designed for the calibration of individual sensor cubes MS01, MS03 and MS04.

The product in the cleaning tool version is designed for cleaning the fluidic circuit of individual sensor cubes MS01, MS03, MS04 and MS05.

- ▶ The product must be used in compliance with the characteristics, operating conditions and conditions of use. This information can be found in the contract documents, the operating instructions and on the rating plate.

### The product:

- ▶ do not use in an outdoor area.
- ▶ use only with calibration or cleaning solutions approved and specified by Bürkert.
- ▶ use only in conjunction with external devices or components recommended by Bürkert.
- ▶ use in a frost-protected location.
- ▶ protect from electromagnetic interference.
- ▶ operate only in perfect working order and ensure appropriate storage, transport, installation and control.
- ▶ use only for its intended purpose.

## 3 BASIC SAFETY INFORMATION

These safety instructions do not take account of any hazards and events arising during installation, operation and maintenance. The operator is responsible for ensuring that local safety regulations in relation to staff are respected.



### Danger due to the nature of the operating agents.

- ▶ Observe the rules in force concerning accident prevention and safety and which relate to the use of hazardous liquids.
- ▶ Observe the information on the safety data sheet for the cleaning solution. The relevant data sheet can be found at the address given on the bottom of the bottle.
- ▶ Wear personal protective equipment when working with cleaning solutions.
- ▶ Dispose of any waste in compliance with the information provided in the safety data sheet. Local regulations regarding disposal shall be observed.

### Various dangerous situations.

To avoid personal injury take care:

- ▶ to use the product only if in perfect working order and in compliance with the instructions provided in these Operating Instructions.
- ▶ not to use this product in potentially explosive areas.

- ▶ not to make any modifications to the product and not to subject it to mechanical loads.
- ▶ to ensure that only trained personnel perform installation and maintenance work.
- ▶ to observe best industry practice.

#### NOTICE

Only operate the product with 4 LR6 AA batteries.

#### NOTICE

##### Elements and components sensitive to electrostatic discharges.

This product contains electronic components sensitive to electrostatic discharges. They may be damaged if they are touched by an electrostatically charged person or object. In the worst case, these components will become defective immediately or will fail when energized.

- Comply with the requirements according to EN 61340-5-1 in order to eliminate or minimize the possibility of damage through sudden electrostatic discharge.
- Do not touch any of the live electrical components.

## 4 GENERAL INFORMATION

### 4.1 Contact address

To contact the manufacturer of the product, use the following address:

Bürkert SAS

Rue du Giessen

BP 21

F-67220 TRIEMBACH-AU-VAL

The addresses of our international branches can be found on the Internet at:

[www.burkert.com](http://www.burkert.com)

### 4.2 Warranty

The warranty is conditional on compliant use of the product in observance of the operating conditions specified in this manual.

### 4.3 Information on the Internet

You can find the Operating Instructions and technical data sheets for Bürkert products at: [www.burkert.com](http://www.burkert.com)

## 5 PRODUCT DESIGN

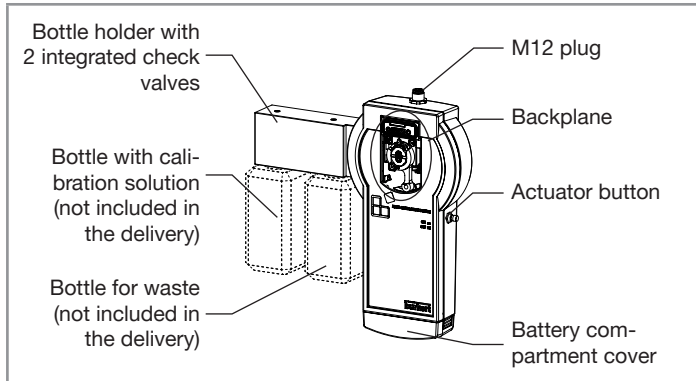


Fig. 1: Calibration tool description

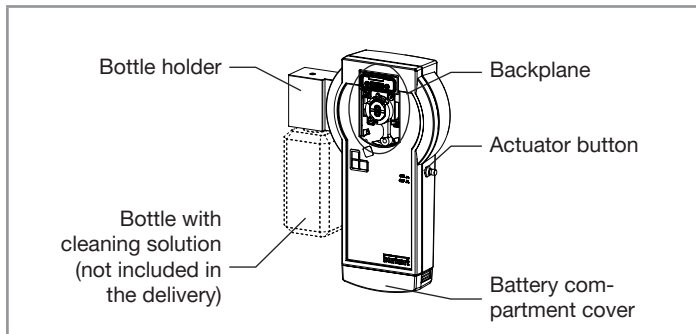


Fig. 2: Cleaning tool description

## 6 TECHNICAL DATA



The following values are specified on the rating plate:

- Operating voltage/current consumption
- IP rating according to EN 60529/IEC 60529
- Fluid temperature range
- Pressure range

### 6.1 Conformity

The product complies with EU directives according to the EU declaration of conformity (if applicable).

### 6.2 Standards

The standards used to demonstrate conformity with the Directives can be consulted in the EU type examination certificate and/or the EU declaration of conformity (if applicable).

### 6.3 Conditions of use



#### WARNING

Risk of injury from malfunction due to outdoor use.

- ▶ Do not use the product in outdoor areas and avoid heat sources that could result in the permissible temperature range being exceeded.

Ambient temperature	+3...+40°C
Air humidity	< 80%, without condensation
IP rating according to EN 60529	IP20

## 6.4 Mechanical data

Dimensions and weight: refer to the relevant data sheet at [www.burkert.com](http://www.burkert.com)

Part	Material
Housing	ABS
Screws	Stainless steel, passivated steel
Rating plate	metallized polyester
M12 plug	Zn, CuZn, Au, PA
<b>Parts in contact with fluid</b>	
• Seal	• EPDM, not replaceable
• Further materials	• PA, POM, PPS, Silicone

Fig. 3: Product materials

## 6.5 Electrical data

Power supply	4 AA LR6 batteries, 6 V total
--------------	-------------------------------

## 6.6 Rating plate

1

2

3

4

5

6

9

8

7

1. Product type

2. Operating voltage (from batteries)

3. Maximum liquid pressure

4. Liquid temperature range

5. Serial number

6. Manufacturing code

7. Order code

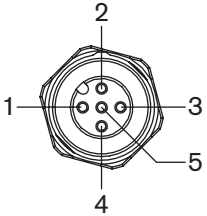
8. Conformity marking

9. IP rating according to EN 60529

Fig. 4: Rating plate description



## 7 CALIBRATION TOOL ELECTRICAL CONNECTION

Pin number	Signal	
1	CAN_SHIELD	
2	Not assigned	
3	Not assigned	
4	CAN_H	
5	CAN_L	

Tab. 1: Pin assignment M12 device plug

→ Connect M12 plug of the calibration tool, with a bus cable available as an accessory, to the last M12 socket of the system.

## 8 COMMISSIONING

### 8.1 Safety instructions



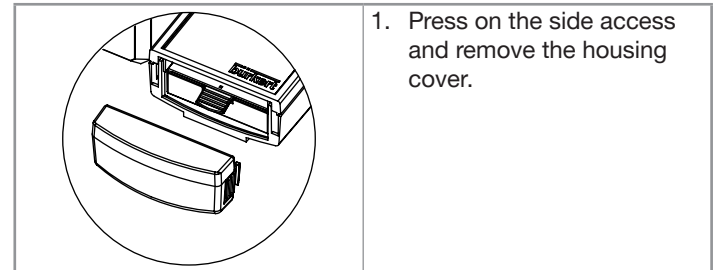
#### WARNING

Danger of injury from improper operation.

- ▶ Prior to commissioning, it must be ensured that operating personnel have read and fully understand the contents of the Operating Instructions.
- ▶ Pay particular attention to the safety recommendations and intended use.
- ▶ The product or system may only be commissioned by trained staff.

### 8.2 Inserting batteries

Before commissioning, insert 4 AA LR6 batteries in the battery compartment of the product, as shown in [Fig. 5](#).



1. Press on the side access and remove the housing cover.

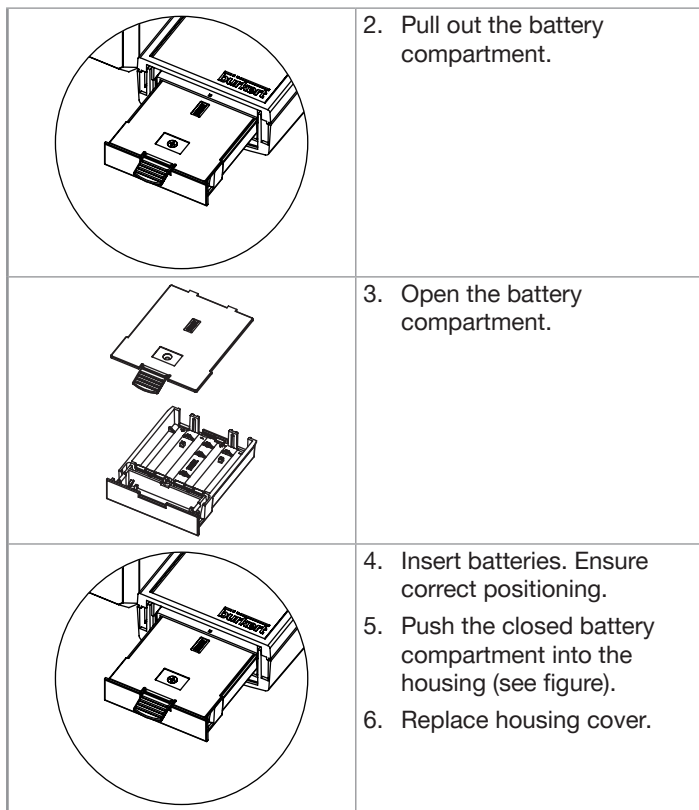


Fig. 5: Inserting batteries in the product

## 9 OPERATION AND FUNCTION

### 9.1 Safety instructions



#### WARNING

Danger due to improper operation.

- ▶ Operating personnel must have read and understand the content of the Operating Instructions.
- ▶ Pay particular attention to the safety recommendations and intended use.
- ▶ The product or system must only be operated by adequately trained staff.

### 9.2 Calibrating the sensor cube



The appropriate Operating Instructions are required for calibrating a sensor cube.

→ The sensor cube Operating Instructions can be downloaded from [www.burkert.com](http://www.burkert.com).

1. Prepare one or two calibration solutions according to the sensor cube to be calibrated. See chap. [11 Spare parts](#).
2. Prepare an empty waste bottle. See chap. [11 Spare parts](#).
3. Screw the empty waste bottle in the correct position of the bottle holder.
4. Screw the bottle with the first calibration solution in the correct position of the bottle holder.



The calibration of the sensor cube is controlled via the system display or using Bürkert Communicator Software.

→ Connect the calibration tool to the system or the Bürkert Communicator Software using büS. See chap. [7 Calibration tool electrical connection](#).

5. Select the sensor cube to be calibrated on the system display or in the Bürkert Communicator: the LED of the sensor cube flashes.
6. Remove the sensor cube from the backplane of the system and fit and lock it on the backplane of the product.



→ Keep the product upright during calibration:

- so that the fluid flows correctly through the sensor cube;
- and so that the check valves function correctly.

7. Reselect the sensor cube in the system display or in Bürkert Communicator: the LED of the sensor cube flashes.
8. Call up the calibration wizard in the maintenance view of the sensor.
9. Refer to the subsequent steps in the sensor cube Operating Instructions.
10. After calibrating, remove the sensor cube from the backplane of the product and insert and lock it on the backplane of the system.

## 9.3 Cleaning the sensor cube



### CAUTION

**Danger due to the nature of the operating agents.**

- ▶ Observe the rules in force concerning accident prevention and safety and which relate to the use of hazardous liquids.
- ▶ Observe the information on the safety data sheet for the cleaning solution. The relevant data sheet can be found at the address given on the bottom of the bottle.
- ▶ Wear personal protective equipment when working with cleaning solutions.
- ▶ Dispose of any waste in compliance with the information provided in the safety data sheet. Local regulations regarding disposal shall be observed.

Sensor fluid system cleaning takes place in two steps:

1. Dissolve the contaminants with a cleaning solution.
2. Flush the cleaning solution with a flushing solution.

### 9.3.1 Dissolving contaminants


1. Prepare a cleaning solution according to the type of contaminant. See chap. [11 Spare parts](#).



The cleaning solution is pumped in the circuit and thinned by impurities.

→ Use a new cleaning solution every five cleanings.

2. Screw the bottle with the cleaning solution onto the product's bottle holder.
3. Remove the sensor cube from the backplane of the system and fit and lock it on the backplane of the product.

-  → Due to the mounting position of the sensor cube, always keep the product upright during cleaning.
- Press the actuator button in order to allow the cleaning solution to flow through the fluid system of the sensor cube. The pump will operate so long as the button is pressed. Adjust the pumping duration according to the degree of contamination of the sensor cube fluid system: see [Tab. 2](#).

Degree of contamination	Pumping duration (s)
Light contamination	10
Average contamination	20
Heavy contamination	60

*Tab. 2: Recommended pumping durations according to degree of contamination*

- Remove the sensor cube from the backplane of the product and lay flat.
- Allow the cleaning solution to soak in for a time dependent on the degree of contamination. See [Tab. 3](#).

Degree of contamination	Soaking time (min)
Light contamination	5
Average contamination	10
Heavy contamination	15

*Tab. 3: Recommended soaking time depending on degree of contamination*

- After the soaking time, ensure that no cleaning solution remains in the sensor cube. See chap. [9.3.2](#).

### 9.3.2 Flush the cleaning solution

- Prepare a flushing solution. See chap. [11 Spare parts](#).



The flushing solution is pumped in the circuit.

→ Use a new flushing solution every five flushings.

- Screw the bottle with the flushing solution in place of the cleaning solution on the product's bottle holder.
- Fit and lock the sensor cube on the backplane of the product.
- Always keep the product upright during flushing.
- Operate the pump for at least 10 s; press the actuator button for 10, 20 or 30 s according to the degree of contamination.

## 10 MAINTENANCE AND TROUBLESHOOTING

### 10.1 Changing the batteries

#### NOTICE

Environmental damage caused by incorrect disposal of batteries.

- Observe local regulations when disposing of batteries.

→ To change the batteries, follow the procedure in chapter [8.2](#).

### 10.2 Troubleshooting

A warning or error may be generated during calibration.

→ To resolve this, refer to the Operating Instructions for the calibrated sensor cube, at [www.burkert.com](http://www.burkert.com).

## 11 SPARE PARTS



#### CAUTION

Risk of injury and/or damage caused by the use of non-original parts.

Non-original accessories and unsuitable replacement parts can cause injuries and damage the product and the surrounding area.

- ▶ Use only original accessories and spare parts from Bürkert.

Accessories	Order code
<b>Cleaning solution</b>	
Cleaning solution, acid, 250 ml	807478
Cleaning solution, alkaline, 250 ml	807486
<b>Calibration solution</b>	
Buffer solution pH 5.00 (20 °C), 50 ml	806698
Buffer solution pH 7.00 (20 °C), 50 ml	806699
Buffer solution pH 9.00 (20 °C), 50 ml	806700
Redoxpotential 475 mV, 50 ml	807045
Conductivity 5 mS/cm, 50 ml	807199
<b>Flushing solution</b>	
Flushing solution, 50 ml	806709
Flushing solution, 250 ml	806710

Accessories	Order code
<b>Electrical accessories</b>	
büS cable, plug/socket, straight, 1 m	772404
büS cable, plug/socket, straight, 3 m	772405
büS cable, plug/socket, straight, 5 m	772406
büS Y-distributor	772420

## 12 TRANSPORT, STORAGE, DISPOSAL

### NOTICE

**Inadequately protected products may be damaged during transport.**

- Transport the product in shock-resistant packaging and away from humidity and dirt.
- Comply with the permissible storage temperature.

**Poor storage can damage the product.**

- Store the product in a dry place away from dust.
- Before storage, pump any cleaning solution out of hoses.
- Storage temperature -40...+55 °C.

**Environmental damage due to product parts contaminated by fluids.**

- When disposing of cleaning solutions, follow the instructions on the safety data sheet. The safety data sheet can be found at <http://sds-id.com/200124-7>
- Dispose of the product and its packaging in an environmentally friendly manner.
- Comply with applicable environmental and disposal regulations.

**Environmental damage caused by incorrect disposal of batteries.**

- Observe local regulations when disposing of batteries.



[www.burkert.com](http://www.burkert.com)