Portable Oxygen Analyser
BA 4000 Inj.

Installation and Operation Instructions
Original instructions
Read this instruction carefully prior to installation and/or use. Pay attention particularly to all advises and safety instructions to prevent injuries. Bühler Technologies can not be held responsible for misusing the product or unreliable function due to unauthorised modifications.

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1 Introduction

1.1 Intended Use
The portable BA 4000 Inj. Bühler O₂ analyser is a special unit for determining oxygen in low gas volumes. This analyser is a modification of the BA 4000, primarily used in the food industry to analyse small residual amounts in modified atmosphere packaging, bottles or tins. The O₂ content in insulating glass panes can also be determined. There are 2 versions.

The device must not be used
- To analyse combustible, inflammable or explosive gas mixtures,
- In explosive areas and
- For applications where equipment failure or malfunction puts persons in immediate danger.

1.2 Design types
The BA 4000 Inj. GV is used for volumes > 35 ml. The duration of the internal sample gas pump can optionally be controlled using an adjustable timing relay.

The BA 4000 Inj. KV is used for gas volumes < 35 ml. This analyser is operated by a vacuum pump. There are different puncturing devices available, depending on the type of packaging.

An optional pressure gauge is available for use with vacuum packaging. This allows for comparing O₂ concentrations at different package pressures. It further allows for zero point calibration without zero gas.

1.3 Ordering instructions

<table>
<thead>
<tr>
<th>Device model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 11 399</td>
<td>BA 4000 Inj. GV</td>
</tr>
<tr>
<td>55 11 5991</td>
<td>BA 4000 Inj. KV</td>
</tr>
</tbody>
</table>

1.4 Functional principle
The measuring cell on the analyser uses the handle principle, utilising the paramagnetic properties of oxygen. In practice, the quality of gas conditioning and the mechanical strain (impact, shock) limit the life of the measuring cell.

The BA 4000 Inj. GV is designed as a portable unit and can be used for monitoring changing locations.

1.5 Scope of delivery
- Analyser
- Product documentation
- Connection/mounting accessories (optional)
2 Safety instructions

2.1 Important notices

Operation of the device is only valid if:

– the product is used under the conditions described in the installation- and operation instruction, the intended application according to the type plate and the intended use. In case of unauthorized modifications done by the user Bühler Technologies GmbH can not be held responsible for any damage,

– when complying with the specifications and markings on the nameplates.

– the performance limits given in the datasheets and in the installation- and operation instruction are obeyed,

– monitoring devices and safety devices are installed properly,

– service and repair is carried out by Bühler Technologies GmbH,

– only original spare parts are used.

This manual is part of the equipment. The manufacturer keeps the right to modify specifications without advanced notice. Keep this manual for later use.

Please particularly note the following analyser instructions:

– Always transport the equipment diligently and carefully. Strong impact and shock may damage the measuring cells in the analyser or shorten their life!

– Disconnect from the mains before opening the unit.

– **BA 4000 Inj. GV: This unit has a 12 V battery, which is always energised.**

Signal words for warnings

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td>Signal word for an imminent danger with high risk, resulting in severe injuries or death if not avoided.</td>
</tr>
<tr>
<td><strong>WARNING</strong></td>
<td>Signal word for a hazardous situation with medium risk, possibly resulting in severe injuries or death if not avoided.</td>
</tr>
<tr>
<td><strong>CAUTION</strong></td>
<td>Signal word for a hazardous situation with low risk, resulting in damaged to the device or the property or minor or medium injuries if not avoided.</td>
</tr>
<tr>
<td><strong>NOTICE</strong></td>
<td>Signal word for important information to the product.</td>
</tr>
</tbody>
</table>

Warning signs

In this manual, the following warning signs are used:

<table>
<thead>
<tr>
<th>Warning against hazardous situations</th>
<th>General notice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning against electrical voltage</td>
<td>Disconnect from mains</td>
</tr>
<tr>
<td>Warning against respiration of toxic gases</td>
<td>Wear respirator</td>
</tr>
<tr>
<td>Warning against acid and corrosive substances</td>
<td>Wear eye/face protection</td>
</tr>
<tr>
<td>Warning against potentially explosive atmospheres</td>
<td>Wear protection gloves</td>
</tr>
<tr>
<td>Warning against hot surface</td>
<td></td>
</tr>
</tbody>
</table>
2.2 General hazard warnings

Installation of the device shall be performed by trained staff only, familiar with the safety requirements and risks. Check all relevant safety regulations and technical indications for the specific installation place. Prevent failures and protect persons against injuries and the device against damage.

**The operator of the system must secure that:**
- safety and operation instructions are accessible and followed,
- local safety regulations and standards are obeyed,
- performance data and installation specifications are regarded,
- safety devices are installed and recommended maintenance is performed,
- national regulations for disposal of electrical equipment are obeyed.

**Maintenance, Repair**

Please note during maintenance and repairs:
- Repairs to the unit must be performed by Bühler authorised personnel.
- Only perform conversion-, maintenance or installation work described in these operating and installation instructions.
- Always use genuine spare parts.

Always observe the applicable safety and operating regulations in the respective country of use when performing any type of maintenance.

---

**DANGER**

**Electrical voltage**

Electrocution hazard.

a) Disconnect the device from power supply.

b) Make sure that the equipment cannot be reconnected to mains unintentionally.

c) The device must be opened by trained staff only.

d) Regard correct mains voltage.

---

**DANGER**

**Toxic, acidic gasses**

Sample gas / calibrating gas can be harmful.

a) If necessary, ensure a safe gas discharge.

b) Switch off the gas supply before performing maintenance and protect from opening inadvertently.

c) Protect yourself from toxic / corrosive gasses when performing maintenance. Wear appropriate protective equipment.

---

**DANGER**

**Potentially explosive atmosphere**

Explosion hazard if used in hazardous areas.

The device is not suitable for operation in hazardous areas with potentially explosive atmospheres.

Do not expose the device to combustible or explosive gas mixtures.
3 Transport and storage

Transport
The unit is sensitive to shock and vibration. Therefore, where possible, transport in the original packaging or large, sturdy packaging at a minimum consisting of 3 layer carton, plastic or aluminium sheet. Line the inside of the packaging with padding at least 10 cm thick on all sides.
The unit should be marked fragile for shipping.

Removal from service and storage
Purge the unit with dry nitrogen or dry air before removing from service for extended periods. Then close the gas inputs and outputs to prevent dirt, dust and moisture from entering the unit.
Store the unit in a dry, ventilated, dust-free room. Cover the unit with suitable packaging to protect it from liquids and dirt.
Storage temperature: -20 °C ... +50 °C
4 Installation and connection

4.1 Installation site requirements

**DANGER** Potentially explosive atmosphere
Explosion hazard if used in hazardous areas.
The device is not suitable for operation in hazardous areas with potentially explosive atmospheres.
Do not expose the device to combustible or explosive gas mixtures.

This unit is intended for use in protected rooms. If necessary, protect from the weather when used outdoors.
The analyser should only be set up on a solid, stable surface. In the event of strong vibration or shock nearby, provide a highly cushioning intermediate layer.

4.2 Electrical connections

**WARNING** Hazardous electrical voltage
The device must be installed by trained staff only.

**CAUTION** Wrong mains voltage
Wrong mains voltage may damage the device.
Regard the correct mains voltage as given on the type plate.

The **BA 4000 Inj. GV** can be operated without mains access after adequately charging the built-in storage battery. Only use the included plug-in charger. The charging time varies based on the level of the rechargeable battery. When fully drained it should be at least 15 h. Please keep the charger connected if the unit will not be used for extended periods (battery trickle charging). Never exhaust the rechargeable battery.

Only operate the **BA 4000Inj KV** with the plug-in charger.
Verify the plug-in charger matches the power supply available on site before use.

4.3 Sample gas supply

The sample gas supply should use the same sample gas path as during measurement. Most importantly, the pressure, temperature and flow rate should be the same.

**NOTICE**
Please note, any change in the temperature and air pressure compared over the last calibration will change the measurements.
4.4 Gas connections

The sample gas inlet is located in the front panel and uses a M6x0.75 hose connection.

The sample gas outlet is located at the back of the unit in form of a hose coupling. With built-in sample gas pump the primary pressure must not exceed max. 5 mbar.

Fig. 1: Front view
5 Operation and Control

**NOTICE**

The device must not be operated beyond its specifications.

The measuring signal of the unit can be picked up via the D-Sub plug at the back of the unit. The following image shows the assignment. In addition, the mA output for the pressure indicator can be picked up (4-20 mA = 0-1100 mbar). The max. load for the optional output is 300 Ohm.

![D-Sub plug configuration](image)

**Fig. 2: D-Sub plug configuration**

The unit is calibrated at the factory. However, the calibration can change due to the ageing process and environmental conditions. These changes in the measuring performance is called drift. The calibration should therefore be checked before every series of measurements to eliminate measuring errors.

**The unit should be calibrated in the following cases:**

- with every initial operation, after the warm-up period
- after great changes in the barometric pressure (changes in weather)
- when the room temperature changes more than 5 °C
- routinely during operation (approx. 1 x per month)

### 5.1 Calibration

Since the measuring system is linear, two calibration points will suffice for the check:

**- Zero point**

The zero point corresponds with the measurement if there is no oxygen in the measuring cell and there is neutral gas such as nitrogen in the unit.

**- Measuring range (sensitivity)**

The sensitivity for the measuring range is set with span gas or ambient air (~20.9 % O₂).

**NOTICE**

Calibration can only be performed with stagnant gas.
5.1.1 Test gases for calibration

-Zero gas
 Zero gas is used to calibrate the zero point. It must not contain oxygen and should not be susceptible to magnetism. Depending on the application, nitrogen N\textsubscript{2} or carbon dioxide CO\textsubscript{2} can be used as zero gas. The selector switch at the back of the unit must be set accordingly.

-Span gas
 Span gas is used to calibrate the sensitivity (in the measuring range). It is a mixture of oxygen and the respective zero gas or ambient air. The oxygen content of the span gas should be as close to the O\textsubscript{2} ratio of the sample gas. However, it should not be less than 15 Vol.%. 

**NOTICE**
The span gas should preferably be added under the same conditions as the sample gas. When using sample gas conditioning, the span gas should therefore be added upstream from this system.

**Span gas supply:**
For units with built-in sample gas pump:
- Add the span gas via T-fitting with the sample gas pump on.
- Set the output pressure on the span gas cylinder so an excess of span gas is dispersed at the T-fitting.
For units without built-in sample gas pump:
- The span gas should be added to the unit with the same pressure and the same flow rate as the sample gas.

5.1.2 Calibration for BA 4000 Inj. GV

The unit should be on for approx. 30 min. before calibrating it so all components are at operating temperature. The puncture device should be removed from the gas inlet during calibration.

**Adjusting the zero point**
- Switch on the pump using the pump/valve switch.
- Connect a hose to the gas inlet. Connect the test gas cylinder and set the pressure regulator on the cylinder to max. 0.1 bar overpressure.
  Use the same anaerobic gas (N\textsubscript{2} or CO\textsubscript{2}) as the zero gas used to gas the packaging to be tested. Set the toggle switch at the back of the unit to the corresponding setting.
- Slowly open the valve on the pressure regulator. If the reading on the analyser’s gauge fluctuates, reduce the pressure with the pressure regulator.
- If the reading is steady, switch off the pump, shut off the zero gas and disconnect the hose (calibration with stagnant gas).
- Use the zero potentiometer to set to 0.0 %.

**Adjusting the range (sensitivity)**
- Connect a hose to the gas inlet. Switch on the pump using the pump/valve switch, add span gas or ambient air and wait for the reading to stabilise.
- Switch off the pump/valve switch and disconnect the hose.
- If necessary, set the “Span” potentiometer via the front panel on the unit so the value matches the span gas (e.g. 20.9 Vol.% for air).

In the event of significant deviations from setpoint during calibration, it’s advisable to repeat calibration to verify.
5.1.3 Calibration for BA 4000 Inj. KV

The unit should be on for approx. 30 min. before calibrating it so all components are at operating temperature. The puncture device should be removed from the gas inlet during calibration.

**Setting the zero point with zero gas**

Disconnect the connection hose to the vacuum pump. Switch on the pump/valve switch (1), which will open the solenoid valve.

- Connect a hose to the gas inlet. Connect the test gas cylinder and set the pressure regulator on the cylinder to max. 0.1 bar overpressure.

  Use the same anaerobic gas (N₂ or CO₂) as the zero gas used to gas the packaging to be tested. Set the toggle switch at the back of the unit to the corresponding setting.

- Slowly open the valve on the pressure regulator. If the reading on the analyser’s gauge fluctuates, reduce the pressure with the pressure regulator.

- If the reading is steady, set the pump/valve switch to 0, which will close the solenoid valve. Disconnect the hose (calibration with stagnant gas).

- Use the zero potentiometer to set to 0.0 %.

**Adjusting the zero point via pressure gauge (optional)**

With an optional pressure gauge (BA 4000 Inj. KV/D), the zero point calibration requires no zero gas. The toggle switch at the back of the unit must be in the position corresponding with the filling gas for the packaging.

- Attach the connection hose to the vacuum pump. Switch off the pump/valve switch, which will close the solenoid valve.

- Switch on the mbar/O₂ switch. The display will show the pressure.

- Switch on the vacuum pump.

- Once the required vacuum has been created, switch off the mbar / O₂ switch. The O₂ concentration will appear.

- Use the zero potentiometer to set to 0.0 %.

**Adjusting the range (sensitivity)**

- Attach the connection hose to the vacuum pump. Switch on the pump/valve switch (1), which will open the solenoid valve.

- Switch on the vacuum pump, air or the span gas will be drawn in.

- Once the reading is steady, switch off the pump/valve switch, which will close the solenoid valve (calibration with stagnant gas).

- If necessary, set the “Span” potentiometer via the front panel on the unit so the value matches the span gas (e.g. 20.9 Vol.% for air).

5.1.4 Carrier gas influence (cross-sensitivity)

The selectivity of the unit’s measuring method is based on the extreme magnetic susceptibility (measured variable for magnetisation) of oxygen. The magnetic susceptibility of other gases is typically so low that its influence on the measurement can be vastly disregarded.

Significant measuring errors only occur when e.g. using nitrogen as the zero gas for calibration, but using CO₂ as the sample gas (filling gas for the packaging). The unit will then show a value, even if the sample gas contains no oxygen, i.e. it is cross-sensitive to the other gas component. In this case, recalibrate with the toggle switch at the back of the unit in the correct position. If the measurement is still incorrect, please contact Service for assistance.

5.2 Notes on operating the BA 4000 Inj. KV/D with pressure gauge (optional)

Use the mbar/O₂ switch to toggle between displaying the pressure and concentration. The pressure is displayed in mbar, the concentration in Vol.%. So in addition to the concentration, the internal pressure for the packaging can also be displayed.
5.3 Performing the measurement

- Attach the needle to the puncture device.
- Apply a self-adhesive piece of rubber to the packaging.
- **BA 4000 Inj. KV**: Only insert the needle far enough into the piece of rubber, at an angle, to cover the side bore. Switch on the pump/valve switch, which will open the solenoid valve. Switch on the vacuum pump and evacuate the analyser.
- Once a vacuum has been created, switch off the pump/valve switch, which will close the solenoid valve.
- Insert the needle all the way into the packaging. The residual gas in the packaging will flow into the analyser. With an optional "pressure gauge", the display can be toggled between O₂ concentration and pressure (mbar/O₂ switch).
- **BA 4000 Inj. GV**: Insert the needle through the piece of rubber and into the packaging. Switch on the pump/valve switch, filling gas will be drawn from the packaging.
- When the reading is steady, switch off the pump, the O₂ concentration will appear.
6 Service

During maintenance, remember:
– The equipment must be maintained by a professional familiar with the safety requirements and risks.
– Only perform maintenance work described in these operating and installation instructions.
– When performing maintenance of any type, observe the respective safety and operation regulations.

**DANGER**

**Electric voltage**

Risk of electric shock

- a) Disconnect the unit from the mains when performing any maintenance.
- b) Secure the equipment from accidental restarting.
- c) The unit may only be maintained and opened by instructed, competent personnel.

**DANGER**

**Toxic, acidic gasses**

Sample gas / calibrating gas can be harmful.

- a) If necessary, ensure a safe gas discharge.
- b) Switch off the gas supply before performing maintenance and protect from opening inadvertently.
- c) Protect yourself from toxic / corrosive gasses when performing maintenance. Wear appropriate protective equipment.

The measuring cell and, if applicable, the built-in sample gas pump, are maintenance free except for occasional calibration. The built-in protective filter in the puncture device must be checked regularly and replaced if dirty.

**6.1 Replacing the rechargeable battery**

**BA 4000 Inj. GV only:**

Depending on the operating and ambient conditions, the rechargeable battery will occasionally need to be replaced (typical life approx. 4-5 years).

We recommend having the battery replaced by the factory to also have the internal gas paths and the measuring cell.
7 Service and repair

This chapter contains information on troubleshooting and correction should an error occur during operation. Repairs to the unit must be performed by Bühler authorised personnel.

Please contact our Service Department with any questions:

**Tel.: +49-(0)2102-498955** or your agent

If the equipment is not functioning properly after correcting any malfunctions and switching on the power, it must be inspected by the manufacturer. Please send the equipment inside suitable packaging to:

**Bühler Technologies GmbH**

- Reparatur/Service -

Harkortstraße 29

40880 Ratingen

Germany

Please also attached the completed and signed RMA decontamination statement to the packaging. We will otherwise be unable to process your repair order.

You will find the form in the appendix of these instructions, or simply request it by e-mail: service@buehler-technologies.com.

### 7.1 Troubleshooting

<table>
<thead>
<tr>
<th>Problem / Malfunction</th>
<th>Possible cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>No display</td>
<td>&quot;Power&quot; switch off</td>
<td>Toggle switch up</td>
</tr>
<tr>
<td></td>
<td>Rechargeable battery in the BA 4000 Inj. GV drained</td>
<td>Plug in the wall power supply and connect to the BA 4000; the display must light up immediately.</td>
</tr>
<tr>
<td></td>
<td>Fuse at the back of the BA 4000 defective</td>
<td>Replace fuse</td>
</tr>
<tr>
<td>The value displayed deviates significantly from the calibrated value or the sample gas measurement to be expected</td>
<td>The ambient or unit temperature when switching the unit on was far below the permissible value of 5 °C</td>
<td>Switch off the &quot;Power&quot; switch and switch on again after 10 sec</td>
</tr>
<tr>
<td></td>
<td>Measuring system vibrates</td>
<td>If necessary, recalibrate</td>
</tr>
</tbody>
</table>

### 7.2 Spare parts and accessories

<table>
<thead>
<tr>
<th>Item no.</th>
<th>Description</th>
<th>Recommended for 2 years of service</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 07 09 91</td>
<td>Measuring cell</td>
<td>-</td>
</tr>
<tr>
<td>55 05 99 910</td>
<td>Rechargeable battery (BA 4000Inj GV only)</td>
<td>1</td>
</tr>
<tr>
<td>55 11 09 91</td>
<td>Internal pump (BA 4000 GV only)</td>
<td>1</td>
</tr>
<tr>
<td>55 05 99 95</td>
<td>Valve (BA 4000 KV only)</td>
<td>1</td>
</tr>
<tr>
<td>91 10 000 002</td>
<td>Fuse</td>
<td>2</td>
</tr>
<tr>
<td>91 10 000 049</td>
<td>Fuse holder</td>
<td>-</td>
</tr>
<tr>
<td>55 05 99 94</td>
<td>Gas inlet screw-in connection</td>
<td>-</td>
</tr>
<tr>
<td>91 36 000 020</td>
<td>Toggle switch</td>
<td>-</td>
</tr>
<tr>
<td>55 10 44 014</td>
<td>Supply board</td>
<td>-</td>
</tr>
<tr>
<td>55 10 23 005</td>
<td>Display</td>
<td>-</td>
</tr>
<tr>
<td>55 10 44 009</td>
<td>Amplifier board</td>
<td>-</td>
</tr>
</tbody>
</table>
### Accessories

<table>
<thead>
<tr>
<th>Item no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 70 520</td>
<td>Vacuum pump 230 V</td>
</tr>
<tr>
<td>65 70 521</td>
<td>Vacuum pump 115 V</td>
</tr>
<tr>
<td>55 11 0994</td>
<td>Pressure gauge</td>
</tr>
<tr>
<td>65 71 999</td>
<td>EV-1</td>
</tr>
<tr>
<td>65 70 9021</td>
<td>EV-3</td>
</tr>
<tr>
<td>65 70 901</td>
<td>Needles for EV-3</td>
</tr>
<tr>
<td>65 70 9012</td>
<td>Needles for EV-1</td>
</tr>
<tr>
<td>65 70 970</td>
<td>Septum for EV-3 (1 m)</td>
</tr>
<tr>
<td>65 70 971</td>
<td>Septum for EV-3 (10 m)</td>
</tr>
<tr>
<td>65 70 947</td>
<td>Septum for EV-1 (1 m)</td>
</tr>
<tr>
<td>65 70 9471</td>
<td>Septum for EV-1 (33 m)</td>
</tr>
<tr>
<td>65 70 9033</td>
<td>Pre-filter for EV-3</td>
</tr>
<tr>
<td>65 70 975</td>
<td>Water Stop fine mesh filter</td>
</tr>
<tr>
<td>55 11 0992</td>
<td>Wall power supply for GV 100-240 V AC, 12 V DC</td>
</tr>
<tr>
<td>91 12 000014</td>
<td>Wall power supply for KV 100-240 V AC, 12 V DC</td>
</tr>
</tbody>
</table>
8 Disposal
Dispose of parts so as not to endanger the health or environment. Follow the laws in the country of use for disposal of electronic components and devices during disposal.
## 9 Appendix

### 9.1 Technical Data

**Technical Data**

<table>
<thead>
<tr>
<th>Measuring component:</th>
<th>Oxygen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range (specify when ordering):</td>
<td>0 ... 25 Vol. %</td>
</tr>
<tr>
<td>Measuring principle:</td>
<td>paramagnetic cell measuring principle</td>
</tr>
</tbody>
</table>

**Measuring Data**

| Accuracy: | 0.1 % O₂ absolute |
| Reproducibility: | ± 0.05 % O₂ |
| Response time: | T₉₀ <10 s |
| Zero drift: | ± 0.1 Vol.% O₂ per week |
| Sensitivity drift: | ± 1% of measuring span per week |

**Gas inlet conditions**

| Gas temperature: | +5 °C to 40 °C |

**Sample gas conditioning**

| Dew point: | at least 5 °C below ambient temperature |
| Dust particles: | Equipment filter with replaceable 8µ filter element |

**Calibration**

| Zero point: | with nitrogen (technically pure), optionally with vacuum |
| Endpoint: | with ambient air or test gas, depending on the measuring range |

**Climatic conditions**

| Ambient temperature: | +10 °C to 45 °C |
| Transport and storage temperature: | -25 °C to 65 °C |
| Relative humidity: | <75 % annual average |

**Measurement output**

| Current signal: | 4...20 mA (max. 400 Ω) |
| Voltage signal: | 0...1 V (min. 1 k Ω) optional |

**Displays**

| Measurement display: | LCD 3½ digits |

**Power supply**

| Wall power supply: | 100-240 V, 50/60 Hz |

**Construction**

| Housing: | Aluminium housing with handle |
| Housing protection class: | IP20 (standard) |
| Dimensions (h x w x d): | 145 x 182 x 240 mm (standard housing) |
| Weight: | approx. 4.5 kg |
9.2 Puncture devices

**EV-1**

Puncture device for single-hand operation. Suitable for sampling gas from soft packaging of modified atmosphere packed products.

**EV-3**

Puncture device with fixed needle. Suitable for sampling gas from soft packaging of modified atmosphere packed products. The additional fine mesh filter also makes it suitable for sampling packages with powdered products, e.g. coffee.

**Water Stop fine mesh filter**

For protecting the measuring cell when analysing moist gasses (bottles, tinned foods). Filters particles, the special coating retains water liquids and aerosols.

9.3 Flow charts

<table>
<thead>
<tr>
<th>BA 4000 Inj. GV</th>
<th>BA 4000 Inj. KV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring cell</td>
<td>Measuring cell</td>
</tr>
<tr>
<td>Internal pump</td>
<td>Vacuum pump</td>
</tr>
<tr>
<td>EV-1 EV-3</td>
<td>(external)</td>
</tr>
<tr>
<td></td>
<td>Solenoid valve</td>
</tr>
<tr>
<td></td>
<td>(bleeding)</td>
</tr>
</tbody>
</table>
10 Attached documents
- Declaration of Conformity KX550004
- RMA - Decontamination Statement
Hiermit erklärt Bühler Technologies GmbH, dass die nachfolgenden Produkte den wesentlichen Anforderungen der Richtlinie 2014/35/EU (Niederspannungsrichtlinie / low voltage directive) in ihrer aktuellen Fassung entsprechen.

Folgende Richtlinie wurde berücksichtigt: 2014/30/EU (EMV/EMC)

Produkt / products: Sauerstoffanalytator / Oxygen analyser
Typ / type: BA 4000, BA 4000 Inj.

Das Betriebsmittel dient zur Messung von Sauerstoff in Gasen.
The equipment is for measuring the oxygen content of gases.

Das oben beschriebene Produkt der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union.
The object of the declaration described above is in conformity with the relevant Union harmonisation legislation.

EN 61000-6-3:2007  EN 61000-6-2:2005  EN 60204-1:2006

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.
This declaration of conformity is issued under the sole responsibility of the manufacturer.

Dokumentationsverantwortlicher für diese Konformitätserklärung ist Herr Stefan Eschweiler mit Anschrift am Firmensitz.
The person authorized to compile the technical file is Mr. Stefan Eschweiler located at the company’s address.


Stefan Eschweiler
Geschäftsführer – Managing Director

Frank Pospiech
Geschäftsführer – Managing Director
Um eine schnelle und reibungslose Bearbeitung Ihres Anliegens zu erreichen, füllen Sie bitte diesen Rücksendeschein aus. Eine genaue Fehlerbeschreibung ist für die Ursachenanalyse nötig und hilft bei der schnellen Bearbeitung des Vorgangs. Die Aussage „Defekt“ hilft bei der Fehlersuche leider nicht.

Die RMA-Nummer bekommen Sie von Ihrem Ansprechpartner im Vertrieb oder Service.


Bringen Sie den Rücksendeschein mit der Dekontaminierungsklärung bitte zusammen mit den Versandpapieren in einer Klarsichthülle außen an der Verpackung an. Ansonsten ist eine Bearbeitung Ihres Reparaturauftrages nicht möglich!

Angaben zum Absender:

<table>
<thead>
<tr>
<th>Firma / Company</th>
<th>Ansprechpartner / Contact person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anschrift / Address</td>
<td>Abteilung / Department</td>
</tr>
<tr>
<td></td>
<td>E-Mail / E-Mail:</td>
</tr>
<tr>
<td></td>
<td>Tel. / Phone</td>
</tr>
<tr>
<td></td>
<td>Fax / Fax:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Artikelnummer / Item number</th>
<th>RMA-Nr. / RMA no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auftragsnummer / Order number</td>
<td></td>
</tr>
<tr>
<td>Anzahl / Quantity</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rücksendegrund / Return reason</th>
<th>Vorgangsnummer des Kunden / Customer transaction number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reparatur / Repair</td>
<td></td>
</tr>
<tr>
<td>Garantie / Warranty</td>
<td></td>
</tr>
<tr>
<td>Zur Prüfung / For inspection</td>
<td></td>
</tr>
<tr>
<td>Rückgabe / Return</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fehlerbeschreibung / Description of the problem:</th>
</tr>
</thead>
</table>

Ort, Datum / Place, Date

Unterschrift / Stempel / Signature / Stamp:

Please complete this return form to ensure your claim is processed quickly and efficiently. An accurate description of the problem is necessary for cause analysis and will help processing the claim quickly. Unfortunately, stating “defective” will not help us troubleshoot the issue.

You may obtain the RMA number from your sales or service representative.

This return form includes a decontamination statement. The law requires you to submit this completed and signed decontamination statement to us. Please complete the entire form, also in the interest of our employees' health.

Attach the return form including decontamination statement along with the shipping documentation to the outside of the package, inside a clear pouch. Otherwise we are unable to process your repair order!

Sender information:

Ort, Datum / Place, Date

Unterschrift / Stempel / Signature / Stamp: 
Bitte füllen Sie diese Dekontaminierungserklärung für jedes einzelne Gerät aus.

<table>
<thead>
<tr>
<th>Gerät / Device</th>
<th>RMA-Nr / RMA no:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serien-Nr. / Serial no.</td>
<td></td>
</tr>
</tbody>
</table>

Ich bestätige hiermit, dass das oben spezifizierte Gerät ordnungsgemäß gereinigt und dekontaminiert wurde und keinerlei Gefahren im Umgang mit dem Produkt bestehen.

Ansonsten ist die mögliche Gefährdung genauer zu beschreiben:

Aggregatzustand (bitte ankreuzen):

- Flüssig / Liquid
- Fest / Solid
- Pulvrig / Powdery
- Gasförmig / Gaseous

Folgende Warnhinweise sind zu beachten (bitte ankreuzen):

- Explosiv
- Giftig / Tödlich
- Entzündliche Stoffe
- Brandfördernd
- Komprimierte Gase
- Gesundheitsgefährdend
- Gesundheitsschädlich
- Umweltgefährdend

Bitte legen Sie ein aktuelles Datenblatt des Gefahrenstoffes bei!

Ort, Datum / Place, Date: ____________________________

Unterschrift / Stempel / Signature / Stamp: ____________________________