

# Technical Data Sheet

## Addixx Oxygen Measuring Cell

### IB-MZ-001



Version: 2018, August 16

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**IB-MZ-001**



**IB-MZ-001 Display**

The **Addixx Residual Oxygen Measuring Cell IB-MZ-001** provides the possibility of recording externally the residual oxygen concentration during an inertisation process e.g. with **Addixx Inert Boxes K-SV** or **K-SR**.

The residual oxygen concentration e.g. in our Inert Boxes **IB-K-SV** or **IB-K-SR** can easily be measured by means of the Oxygen Measuring Cell **IB-MZ-001**.

For this purpose, gas is introduced from an inert gas source through the open gas inlet valve into the Inert Box. The open gas outlet valve is connected with the electrically connected measuring cell by means of a hose (gas in) and it is flooded with the gas from the Inert. While doing so, the current residual O<sub>2</sub> concentration is continuously determined and displayed. The escaping gas is then released by means of a hose (gas out) to an exhaust or through a window outside. When the desired residual O<sub>2</sub> concentration has been achieved, the two lock valves of the Inert Box are closed, and the Inert Box is separated from the gas source and the measuring cell. Subsequently, e.g. UV curing can be performed on a conveyor belt.

The measured value and the limit value set are displayed on a alphanumeric LCD display with background lighting.

The display range of the **Addixx Residual O<sub>2</sub> Measuring Cell IB-MZ-001** is normally between 0.1% to 21% percentage of oxygen, which is displayed in steps of 0.1%. For measuring lower residual O<sub>2</sub> concentrations, an additional separate device can be provided upon request.

For the **Addixx Residual O<sub>2</sub> Measuring Cell IB-MZ-001** an operating voltage of 220V is required so that it can be connected to any normal electrical outlet without any additional power supply unit.

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Technical Data	
Method of measurement:	Zirconium dioxide
Display:	Alphanumeric LCD display with background lighting
Measurement ranges:	0.1 to 25 vol %
Output signal:	4 to 20 mA
Limit value output:	1 changeover contact
	Contact load 30 V DC, 1 A
Precision: (with regular calibration)	$\leq \pm 1 \%$
Response time: (T90)	$\leq 2$ seconds
Gas temperature:	5 to +45 °C non-condensing
Pressure dependence:	
150 mbar to 800 mbar	2 % of the measured value /100 mbar
800 mbar to 5 bar	0.5 % of the measured value /1 bar
Housing:	ABS
Dimensions:	200 x 150 x 78 mm (length x width x height)
Weight:	approx. 1.2 Kg
Ambient temperature:	+0 °C to +45 °C
Transport and storage temperature:	-10 °C to +50 °C
Power supply:	230 V, 50 – 60 Hz

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### Handling and Safety Instructions:

1. When dealing with inert gases, it is absolutely necessary to ensure a good ventilation of the rooms or that the inert gases are released to an exhaust or outside.

**You must never work in any unventilated rooms!!**

**Please make sure to always observe the safety instructions of the inert gas supplier**

and to perform measurements of the gas concentration in the work area, if applicable, in particular in connection with heavy inert gases (argon, carbon dioxide, etc.)!!


2. The Oxygen Measuring Cell **IB-MZ-001** is made of plastic (ABS – Acrylnitrile Butadiene Styrene). A result thereof is a sensitivity to very extreme external mechanical strain! Therefore the Inert Box should not be thrown on the floor or dropped! In this case or in case of any destruction of the plastic housing, the Inert Box must be replaced. Danger of injury!!
3. The Oxygen Measuring Cell **IB-MZ-001** is made of ABS (Acrylnitrile Butadiene Styrene), and accordingly it must not be cleaned with any solvents, such as acetone or butyl acetate. We recommend to clean the Oxygen Measuring Cell with alcohols, such as ethanol or isopropanol.
4. When flooding the Inert Box with inert gas, you should always only work with low gas pressure (max. 0.1 – 0.3 bar pressure) in order to prevent e.g. that the hose connections blow off the Inert Box or the Oxygen Measuring Cell or that both components are “blown up”!
5. The oxygen measuring cell **IB-MZ-001** is not suitable for use in potentially explosive atmospheres.
6. Warm-up time for the oxygen measuring cell **IB-MZ-001** is approx. 5 minutes; highest precision is obtained after approx. 15 minutes.
7. **Attention:** The Oxygen Measuring Cell **IB-MZ-001** must not be flooded with any reactive or caustic gases (e.g.  $F_2$ ,  $Cl_2$ ,  $Br_2$ , fluorocarbons (FCs),  $SO_x$ ,  $H_2S$ ,  $HF$ ,  $HCl$ ,  $HBr$ , etc.), outgassing products, and with any solvents or gases of solvents!!

**Do not use any explosive gas mixtures!!**

**Inert gases should be used only!!**

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<b>Warranty terms and conditions</b>	The warranty period shall be 24 months from the date of delivery, <b>except for any consumables and wearing parts.*</b>
	<p><b><u>Note:</u></b></p> <p>The warranty shall expire if any repairs or changes are made by persons who have <b><u>not</u></b> been authorised by us to that end.</p> <p>We shall not assume any liability either for any damage:</p> <ul style="list-style-type: none"> <li>• in case of any faulty operation or misuse</li> <li>• in case of any improper handling</li> <li>• in case of any inappropriate use in a way which is not compliant with its intended use</li> <li>• caused by operation with the wrong type of power or voltage.</li> </ul> <p><b><u>Calibration:</u></b></p> <p>In order to achieve highest possible precision, it is recommended to monitor calibration and to possibly perform a recalibration at regular intervals.</p> <p>The calibration or change of sensor shall only be performed at Addixx Specialities or by companies commissioned by Addixx Specialities!</p>

\* The zirconium dioxide measuring cell is a wearing part and shall be excluded from warranty.

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### Useful life

The useful life of the sensor is approx. 15,000 hours when operated in ambient air (20.9% O<sub>2</sub>; 25°C; rel. F. 20%-60%).

Gases containing halogens F, Cl, Br, as well as all halogen-containing compounds existing in the gas-phase, such as fluorocarbons (FCs), cause damage to the sensor, even in smallest quantities.

Gases, such as SO<sub>x</sub> and H<sub>2</sub>S, will lead to an impairment of the activity of electrodes and hence to a reduction of the useful life.

The useful life resulting therefrom will depend on the duration of impact and the concentration, so that no period of time can be indicated. Volatile organic compounds, such as evaporation of silicon-like sealing compounds or adhesives, can also have a damaging effect. They can have a negative impact on the useful life of the sensor.

Subject to technical changes.

No liability whatsoever shall be assumed for any misprints and for any damage possibly resulting therefrom.

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