

#### Description

Integral Measuring Concept for monitoring of biogas systems:

- Sampling and conditioning of measured gas, transmitter (such as CH<sub>4</sub>, CO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>S) and evaluation combined in one compact wall mounted housing. Process of measurement especially designed for biogas application.
- At the same time possibility of continuous monitoring of ambient air (such as CH<sub>4</sub>, H<sub>2</sub>S).
- Four 4-20 mA-Outputs (only 430109: IMC-4DA-Biogas2)

#### Features

##### Transmitter

- Number: 1 to 4
- Allocation of transmitter inputs to analysis including sampling and conditioning of measured gas as well as monitoring of ambient air freely selectable

##### Signal Processing

- Selection out of ExTox-Series Sens(-I) and ExSens(-I)
- Control Unit ET-4D2 or ET-4DA2 for 4 transmitter inputs, incl. 8 freely configurable relay outputs and serial interface; additionally control of sampling and conditioning of measured gas as well as evaluation of status messages.
- Software Extension Biogas-Analysis : discontinuous measurement in batch mode with configurable intervals for measuring / flushing / air; indication of the latest measured value during flushing and air phases; pressure compensation; control of overload protection for transmitters based on the principle electrochemical cell

##### Sampling of Measured Gas

- Continuous monitoring of ambient air
- Gas suction pump and electronic flow rate monitoring
- Maximum length of sample line  $\geq 50$  m
- Condensate trap incl. hose pump
- Magnetic valve to change from measured gas to flushing air and to control the batch measurement
- Overload protection for hydrogen sulphide transmitter
- Hosing: PE/PP
- Dust filter
- Flame arrestor  $\odot$  IIG IIB3 (inlet of measured gas)

##### Connections

At the bottom of the housing for 4/6-Hose (inner / outer  $\varnothing$ : 4/6 mm)

- 3 glands for measured gas inlet, flushing air and gas outlet
- 1 gland for condensate outlet

##### Operation Temperature

+5 °C to +40 °C

##### Pressure at sampling point

-100 hPa to +100 hPa (relative to ambient)

# Integral Measuring Concept IMC-4D(A)-Biogas2

Article-No.: 430108 (430109)



## Mechanical Features

Dimensions	Standard version: 600 mm x 600 mm x 350 mm (Height x Width x Depth)
Housing	Wall mounted housing with door, mounting plate, foamed-in door sealing, 2 cam locks
Material	Steel, powder-coated in textured RAL 7035
Climatisation	2 fans, rotary speed monitored (at the same time leakage protection)
Storage Temperature	-25 °C to +60 °C

## Electrical Features

Power Supply	<ul style="list-style-type: none"><li>• 230 V AC</li><li>• Power Supply 230 V AC/24 V DC, 120 W integrated</li></ul>
Cable Gland	At the bottom of the housing <ul style="list-style-type: none"><li>• 1 x M20 x 1.5 (diameter of cable 7-13 mm)</li><li>• 10 x M16 x 1.5 (diameter of cable 5-10 mm)</li></ul>
Terminal Assignment	<ul style="list-style-type: none"><li>• Power supply</li><li>• Central connection PCB for transmitter and digital inputs and relay outputs</li></ul>

## Options

- **Monitoring of Ambient Air:**  
A continuous monitoring of ambient air, such as for example for Methane (CH<sub>4</sub>) and Hydrogen Sulphide (H<sub>2</sub>S), can also be realised via external ExTox-Transmitters.
- **Change-over of measuring points:**  
The system can be changed over between 2 and maximum 4 measuring points. After each measurement the gas inlet is cyclically changed over to the next measuring point. Control of course is done by the control unit.
- **Flame Arrestor**  IIG IIB3 (Standard) or  IIG IIC:  
When sampling in hazardous areas the gas flow inside the IMC is decoupled of the monitored process as far as the danger of explosion is concerned. The flame arrestor is connected to the measured gas inlet. When returning the measured gas into the process another flame arrestor at the measured gas outlet is necessary.
- **Measured gas cooler including automatic removal of condensate:**  
Gas dehumidification by means of a Peltier cooler, temperature of measured gas at outlet: +5 °C (Recommended for very high humidity content in measured gas.)
- **Hydrophobic dehumidification of measured gas:**  
Dehumidification of gas is done via a chemical exchange process. (Recommended for very high humidity content in measured gas.)
- **Heating for enclosure with thermostat control +5 to +30 °C :**  
Necessary for very low temperatures at the place of application. Formation of condensate inside the housing is avoided when installing the IMC outside.
- **ProfiBus®-Connection:**  
Measured values and messages can be transferred to a ProfiBus® via Interface. (Further connections to superior systems on request).
- **Data Logger:**  
Measured values and messages are stored on a SD memory card. All data can be read out and processed on every standard PC later on.
- **Customer specific modifications – Ask us!**  
Different biogas concepts also require different monitoring concepts. The modular design of our IMC-Systems allows us to respond to your special wishes and requirements.

This Data Sheet is at the same time a type specific supplement  
to the Instruction Manual *ExTox Integral Measuring Concept Series IMC-8 and IMC-4*.

(Subject to technical changes)