



Instruction Manual

ExTox H₂S-AKF2

Foreword

We thank you very much for your confidence in our products and us, the ExTox Gasmess-Systeme GmbH.

Please do not hesitate to contact anytime in case of questions or if you require information:

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(Subject to technical changes)

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1 Introduction

This Instruction Manual describes the functions of *ExTox*-Measuring Concepts H₂S-AKF2 (Art. 410107).

These Measuring Concepts serve for breakthrough monitoring of active carbon filters for biogas systems by means of H₂S-Measurement.

You will find further details on the Technical Data Sheet, the also supplied documentation of the system (Connection scheme, ...) and of course the Instruction Manual of the corresponding transmitters. Please do especially consider maintenance and installation hints for the transmitter which have correspondingly to be transferred to the Measuring Concept.

Please read this Instruction Manual carefully before installation and initial operation. We kindly ask you to pay attention to all details and cross-references.

We kindly ask you not to repair the IMC or to perform any changes which go beyond the measures described herein. Otherwise you endanger your own safety and your warranty claims of merchantability. In such cases please contact ExTox or authorised ExTox Service Partner. Third parties take the responsibility for correct performance of work when maintenance and repairs are done by them.

On receipt of goods please take care that packing and consignment are not damaged and the goods supplied correspond to the articles described in the delivery note. Please do also compare with your order. In case of any damage please inform your forwarding agent and your supplier. Please keep the damaged packing.

Please keep in mind that our *ExTox*-Measuring Concepts are sensitive measuring devices and take special care when unpacking and installing them.

2 Measuring Operation

2.1 Measuring Cycle

The measuring cycle consists of two phases.

During the rinsing/measurement phase the gas flow from the biogas line to the transmitter is open. The gas transport is done by means of the installed pump. At the end of this phase the actual measured value is determined and indicated. Flow-rate monitoring is also active during this phase. If the flow-rate is too low, a fault indication is issued by a current value output of 1 mA via the 4...20 mA-output. The fault indication remains active up to the end of the following rinsing/measurement phase even though the correct flows has been reached again earlier. By this way incorrect measurements due to short rinsing of the sensor will be avoided.

During the second phase air is applied to the transmitter. For the first three minutes of this phase the pump is working to replace the biogas at the transmitter by air. The measured value remains frozen at the 4...20 mA-output during this phase.

2.2 Protection Function at high H₂S-Concentrations

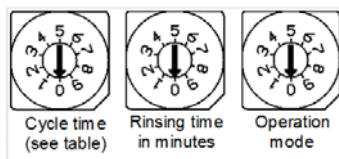
In order to avoid damage of the transmitter by too high concentrations the transmitter signal is internally evaluated during the rinsing phase. In case the end value of measuring range is exceeded the system switches to the air phase. In order to indicate exceeding of measuring range 22 mA are issued and fault relay K3 is deactivated. After the air phase the system tries automatically to continue the normal measuring cycle with a flushing phase.

2.3 Initialisation

With connecting the system to power it starts operation automatically with flushing phase. Until the first measured value has been evaluated 0 ppm H₂S (4 mA) are issued. By means of the reset key on the electronic board a re-start can always be released.

3 Parametrisation

Three rotary switches on the electronic board allow the following system settings:



Cycle times:

0: 30 min	5: 6 hrs
1: 60 min	6: 8 hrs
2: 90 min	7: 12 hrs
3: 2 hrs	8: 5 min
4: 3 hrs	9: 10 min

Cycle time (Standard setting 3 = 2 hours): length of the measuring cycle can be adapted to the requirements of the filter monitoring by means of this setting.

Rinsing time (Standard setting 5 = 5 Min.): time of rinsing has to be so long that a settled measuring signal could arise at the transmitter till the end of this time. Gas flow-through as well as hose length influence this response time of the transmitter.

Operation mode (Standard setting 9): the switch operation mode has always to be in position of standard setting for the system under normal operation. Especially at the end of maintenance normal operation has to be activated by means of a reset. (All other operation modes are designed for other applications.)

4 Installation

The system and the corresponding transmitter are designed for wall mounting. The sampling adapter has to be installed at the sampling point on the biogas line.

Please pay attention to the maximum hose length between biogas sampling point and system which are indicated in the Technical Data Sheet.

The measuring concept needs 230 V power supply. The transmitter is connected to the measuring concept by means of the pre-installed connection line. Connection of the measuring concept to an ExTox-Control Unit or an ExTox-IMC is like a usual transmitter.

The system may not be installed in explosion hazardous areas

On principle flammable or toxic measured gases should be lead off safely, for example out-of doors via the roof.

Suitable measures, such as for example shut-off valves or ball cocks (see Accessories), to avoid release of biogas into ambient air or entry of air into the biogas line in the case of maintenance work.

5 Maintenance

Checking of the measuring function of the transmitter has to be done according to the description in the Instruction Manual.

The settings 3 to 7 of the operation mode switch allow control of the pump and the magnetic valve in the H₂S-AKF and facilitate calibration and adjustment of the transmitter. You will find

explanations on the individual settings of the switch on a sticker inside the system. Before getting into maintenance mode settings should be checked in order to avoid activation of unwished alarms.

Change of operation mode is only effective after release of a re-start by pressing the reset key on the electronic board. Especially after end of maintenance, normal operation (switch setting 9) has to be activated again by means of a Reset.

Suitable measures, such as for example shut-off valves or ball cocks (see Accessories), to avoid release of biogas into ambient air or entry of air into the biogas line in the case of maintenance work.

6 Accessories/Spares

Art.-No. 211212	Transmitter Sens H ₂ S-100-EC
Art.-No. 862005	PE-Hose
Art.-No. 940348	Gas pump
Art.-No. 940227	Magnetic valve 3/2-ways, 230 V AC
Art.-No. 830104	Pressure regulator
Art.-No. 950418	Sampling adapter ½", V2A, complete
Art.-No. 950366	Sampling adapter, V2A, (double nipple of the sampling adapter)
Art.-No. 950354 (2 pieces)	Headless screw (cover of the sampling adapter)
Art.-No. 940028	Detonation protection IIB3 (for the sampling adapter)
Art.-No. 940041	Choke valve
Art.-No. 950235	Socket ball cock, stainless steel V4A, G1/2"
Art.-No. 950368	Double nipple, hexagonal, VA, G1/2"