ADOS®
est. 1900

INSTRUMENTATION AND CONTROL

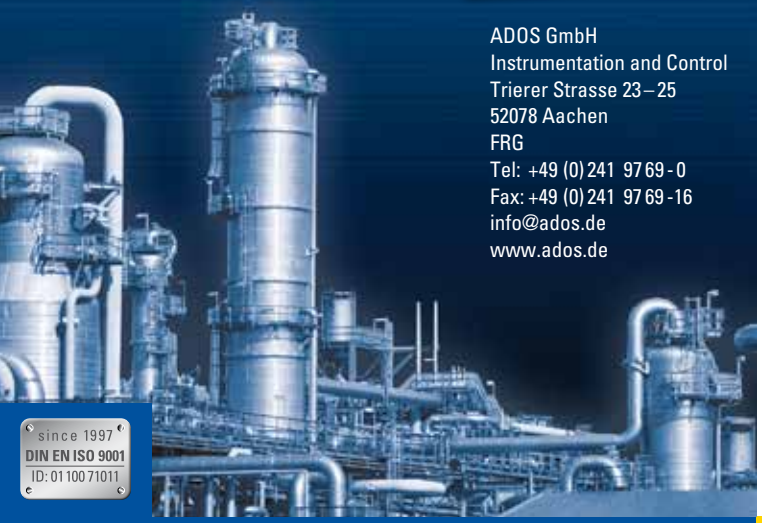
PRODUCT OVERVIEW

measuring instruments for monitoring operational performance

■ Gas Analysis ■ Gas Warning ■ Environmental Protection

Our specialists offer all over the world expert advice, first-class installation as well as a reliable service on site.

ADOS GmbH
Instrumentation and Control
Trierer Strasse 23–25
52078 Aachen
FRG
Tel: +49 (0) 241 9769-0
Fax: +49 (0) 241 9769-16
info@ados.de
www.ados.de



since 1997
DIN EN ISO 9001
ID: 01100 71011

MEASURING, CONTROL AND WARNING UNIT FOR SENSORS

Flex ADOS 914 LON®

VDI 2053 SIL1

FEATURES

The **FlexADOS 914 LON®** is a measuring, control and warning unit for gas sensors. It continuously monitors the ambient air and provides an early warning of harmful, explosive and non-flammable gases and vapours.

Together with the TOX 914 LON® gas transmitters, FlexADOS 914 LON® fulfills VDI guideline 2053 and also EN 50271 and EN 50545-1.

Up to 60 TOX 914 LON® gas sensors can be connected to the device. 2 alarm levels are available directly. Further alarm levels can be added per module.

As an alternative we offer our FlexADOS 914 CP as 4-20mA version providing the following characteristics: 2 levels (ventilation zones), up to 12 analogue 4...20mA sensors are evaluated, five alarm thresholds per sensor, maximum of 14 potential-free changeover contacts. Together with the 592 TOX gas transmitters, FlexADOS 914 CP fulfills VDI guideline 2053 and also EN 50271.

Optional data interfaces for building management systems (BMS): LONworks, Modbus RTU, Modbus TCP, Profibus DP

FIELDS OF APPLICATION

- Garages and tunnels
- Chemicals industry
- Paint and varnish manufacturing
- Liquid gas storage facilities
- Laboratories
- Refrigerated warehouses (ammonia monitoring)
- Refineries
- Measurement of oxygen concentration
- Gas-powered boilers
- Wastewater treatment plants
- and much more

MULTI-CHANNEL GAS SENSOR SYSTEM

FlexADOS 914 MED

Ex SIL1

FEATURES

The evaluation unit has been equipped with a robust cabinet to resist increased mechanical strains as they may occur in the maritime sector. Moreover, the evaluation unit disposes of the class certificate DNV-GL and fulfills the requirements of the Marine Equipment Directive 2014/90/EU (marking: MED wheel mark).

Together with the GTR 210 gas transmitter family, **FlexADOS 914 MED** achieves safety integrity level SIL1 and can be used for primary explosion protection.

Optional data interfaces for building management systems (BMS): LONworks, Modbus RTU, Modbus TCP, Profibus DP

Certified according to:

EN60079-29-1	EN50270
EN50104	DNV-GL
EN45544-1,-2,-3	MED 2014/90/EU
EN50271	IEC 60092-504

FIELDS OF APPLICATION

- Explosion protection on ships
- Ships with LNG propulsion
- LNG bunker vessels
- and much more

MULTI-CHANNEL GAS SENSOR SYSTEM

Flex ADOS 914

SIL1

FEATURES

The multi-channel gas detector system **FlexADOS 914** continuously monitors the ambient air and provides an early warning of harmful, explosive and non-flammable gases and vapours.

Together with the GTR 210 gas transmitter family, FlexADOS 914 fulfills EN 50271, achieves safety integrity level SIL1 and can be used for primary explosion protection.

Up to 12 gas sensors can be connected to the device. A maximum of 14 potential-free contacts are available.

Optional data interfaces for building management systems (BMS): LONworks, Modbus RTU, Modbus TCP, Profibus DP

Certified according to:

EN 60079-29-1
EN 50104
EN 45544-1,2,3

FIELDS OF APPLICATION

- Explosion protection chemicals industry
- Paint and varnish manufacturing
- Liquid gas storage facilities
- Laboratories
- Refrigerated warehouses (ammonia monitoring)
- Refineries
- Measurement of oxygen concentration
- Gas-powered boilers
- Wastewater treatment plants
- and much more

MULTI-CHANNEL GAS WARNING UNIT

MWS 906

FEATURES

The multi-channel gas warning unit **ADOS MWS 906** continuously monitors the ambient air and issues an early warning of gases and vapours that are dangerous to health, or when there is a danger of explosion, for non-combustible gases and vapours.

Examples of measurable gases:

- Acetylene
- Ammonia
- Methane (natural gas)
- Hydrogen chloride
- Carbon dioxide
- Carbon monoxide
- Petrol
- Xylene

FIELDS OF APPLICATION

Monitoring of:

- Heating systems
- Garages and tunnels
- Liquid gas storage plants
- Laboratories
- Cold-storage depots
- Plastic processing workshops
- Chemical industries
- Paint varnish manufacturers
- Concentration measurement of O_2
- and many more

MULTI-CHANNEL GAS WARNING UNIT

MWS 903

FEATURES

The multi-channel gas warning equipment **ADOS MWS 903** continuously monitors the surrounding air and provides an early warning of dangerous, explosive and non-combustible gases and vapours.

Up to 8 gas sensors can be connected to the device.
A maximum of 12 potential-free contacts are available.

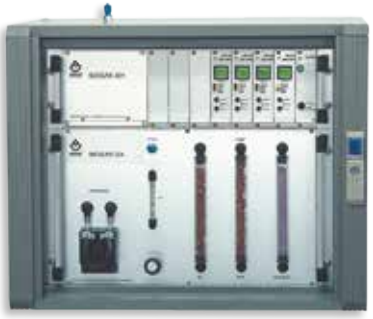
FIELDS OF APPLICATION

Monitoring of:

- Heating systems
- Garages and tunnels
- Liquid gas storage rooms
- Laboratories
- Cold-storage houses
- Plastic processing plants
- Chemical industries
- Paint manufacturing plants
- Concentration measurement of O_2
- and many more

MULTI-CHANNEL GAS ANALYSER

Biogas 401



FEATURES

The Biogas analyser **ADOS Biogas 401** monitors, either continuously or intermittently, gas components contained in Biogas, and optionally the surrounding air to provide an early warning of dangerous, explosive and non-combustible gases and vapours.

Typical application is the measurement of:
CH_4, O_2, CO_2 (optionally continuous)
H_2S, H_2 (only discontinuous)

Measuring principles:
electro-chemical (H_2S, H_2, O_2)
infrared (CH_4, CO_2)

Monitoring of more than one measuring point possible.

FIELDS OF APPLICATION

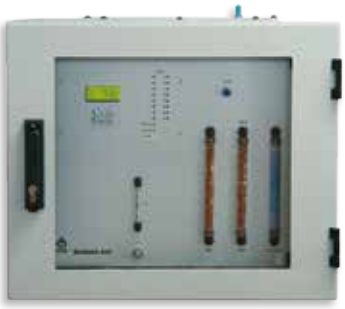
- Monitoring of biogas components
- Warning of explosive gas mixtures
- Warning of gases that endanger health
- Warning of non-combustible gases
- Dedicated for processes with high humidity levels
- Multiple use for alarm values

Equipped with a water sensor for the detection of condensate breakthrough

Feature:
- modular construction
- using a special cabinet an outdoor installation is possible

MULTI-CHANNEL GAS ANALYSER

Biogas 905



FEATURES

The Biogas analyser **ADOS Biogas 905** monitors, either continuously or intermittently, gas components contained in Biogas, and optionally the surrounding air to provide an early warning of dangerous, explosive and non-combustible gases and vapours.

Typical application is the measurement of:
CH_4, O_2, CO_2 (optionally continuous)
H_2S, H_2 (only discontinuous)

Measuring principles:
electro-chemical (H_2S, H_2, O_2)
infrared (CH_4, CO_2)

Monitoring of more than one measuring point possible.

FIELDS OF APPLICATION

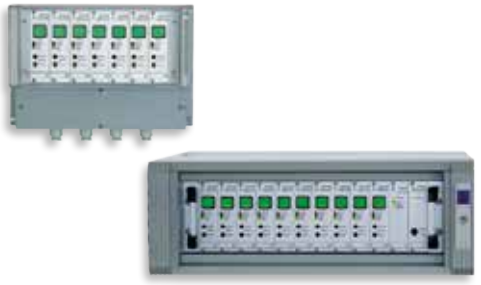
- Monitoring of biogas components
- Warning of explosive gas mixtures
- Warning of gases that endanger health
- Warning of non-combustible gases

Equipped with a water sensor for the detection of condensate breakthrough

Feature:
- fixed design

MULTI-CHANNEL GAS WARNING SYSTEM

GW 399



FEATURES

The multi-channel gas warning system **ADOS GW 399** continuously monitors the ambient air and provides an early warning of hazardous, explosive and non-combustible gases and vapours.

Suitable for measuring tasks where every sensor must have high reliability based on its own control unit as well as its own optical and electrical output signals. In respect to explosion protected sensor installations the GW 399 system offers the optimum technical solution. A master card can supervise central alarms as well as serial data output.

FIELDS OF APPLICATION

Monitoring of:

- Heating systems
- Liquid gas storage rooms
- Laboratories
- Cold-storage houses and air conditioning plants
- Plastic processing plants
- Chemical industries
- Paint manufacturing plants
- Concentration measurement of O_2
- and many more

GAS TRANSMITTER

GTR 210

also available as stand-alone version
(GTR 210 Comfort; only for non-Ex installations)

Ex SIL1

FEATURES

The gas transmitter **ADOS GTR 210** is suitable for continuous measurement of gases in normal areas and areas where there are risks of explosion. By employing 6 different types of sensor, noxious, explosive and non-combustible gases and vapours can be measured. Display of the measured gas concentration and the adjustable alarm thresholds, are shown on a multi-colour graphic display.
The keyboard input is by way of a touchpad.

The type test of the explosion-protected gas transmitter, is completed by the DEKRA.

ATEX certificate: DEKRA 11ATEX0257 X
IECEx certificate: IECEx DEK 11.0090X 0/1
Type of protection: Ex d e ia mb IIC T4 Gb
SIL 1 & functional test: ATEX Certificate –> BVS 12 ATEX G 001 X

FIELDS OF APPLICATION

Monitoring of:

- Chemical industry
- Manufacture of paints and varnishes
- Plastic processing plants
- Sewage works
- Gas-fired boiler systems
- Liquid gas storage houses
- Laboratories
- Measurement of oxygene concentration
- Refineries
- Cold-storage houses (Ammonia monitoring)
- Paint spraying booths
- Electrolysis
- and many more

NEW: Option MED
Expanded scope of application marine:
EC type test Marine Equipment Directive
IP 66 and saltwater resistance

SENSOR FOR MEASURING THE CONCENTRATION OF TOXIC GASES

TOX 914 LON®/TOX 592

FEATURES

The gas measuring sensor **ADOS TOX 914 LON®/TOX 592** is suitable for the continuous measurement of toxic gas concentrations in the air.

The use of various electro-chemical cells to measure various gases is possible.

Protection class IP 54.

Two sensor versions with different output signals are available:

- TOX 592 with a 2-wire system with 4-20 mA electricity output
- TOX 914 LON® with intelligent 4-wire LON® fieldbus

FIELDS OF APPLICATION

- the TOX 914 LON respectively the 592 TOX fulfills together with the FlexADOS 914 LON respectively the FlexADOS 914 CP the VDI guideline 2053 as well as the standard EN 50271 and therefore can be used for measurement, control and warning in underground car parks
- For monitoring at working places, to control the maximum concentration value e.g. in laboratories or motor test stands
- In private and collective shelters for monitoring the external or internal air

HYDROCARBON ANALYSER

KM 2000 CnHm EM

FEATURES

The modular constructed **ADOS KM 2000 CnHm EM** equipment incorporates a microcontroller-aided measurement device for measuring solvents. All combustible gaseous CnHm compounds can be measured with the exeption of chlorinated and sulphur-sublimed hydrocarbons.

The thermocouples used for measurements, in conjunction with applying the principle of heat reaction, offer the following advantages:

- high degree of sensitivity
- good accuracy
- negligible drift of zero point
- over-range signals have no effect

Note: tested and approved in accordance with the guidelines of TA-Luft (German Technical Instructions on Air Quality Control) from 2002, fulfills the requirements of QAL 1 according to DIN EN14181.

FIELDS OF APPLICATION

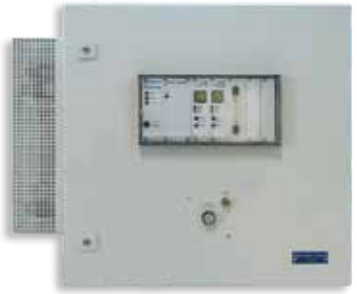
Supervision of industrial processes

- KM 2000 CnHm EM:
  measuring the emission of hydrocarbons,
  according to the German clean-air regulations
- KM 2000 CnHm:
  measuring solvent saturation
  measuring the concentration of solvents

Room air (ventilation) monitoring
a warning is issued at a very low concentration of toxic gas thus preventing any danger to health.

FLUE GAS ANALYSER

RG 399



FEATURES

The flue gas analyser **ADOS RG 399** is suitable for supervising exhaust and process gases that contain traces of corrosive gas and/or dust.

The gas preparation before analysing, is achieved by way of a double-filter that is self-regenerating.

Examples of measurable gases:

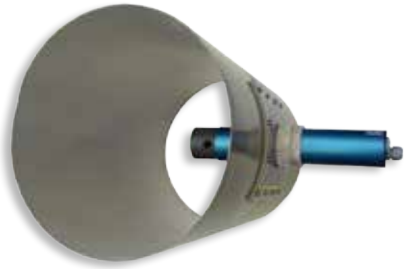
- Carbon dioxide
- Carbon monoxide
- Methane
- Oxygen

FIELDS OF APPLICATION

- Supervision of flue gases
- Supervision of boiler installations
- Supervision of process and exhaust gases
- and many more

DUST FILTER MONITORING

Filter-Guard 206



FEATURES

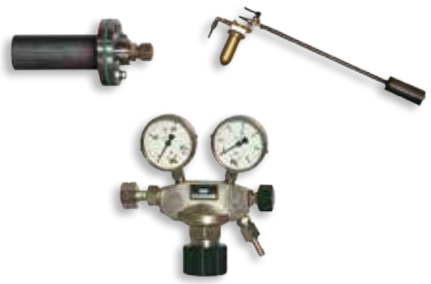
The **ADOS Filter-Guard 206** continuously monitors the clean air side of any fine dust filter installation.

A warning is initiated when a sudden increase in dust concentration is present, i.e. due to a breakdown in the filter casing or bag.

FIELDS OF APPLICATION

- Monitoring fine dust filter systems at the clean air side
- Vibrating and jet filter systems
- Air extraction installations in wood and plastic processing plants
- Air conditioning units with dust filter systems
- Paint and varnish production
- Ambient air monitoring at workplaces
- and many more

KM 2000 Accessories



ACCESSORIES FOR HYDROCARBON MEASUREMENT

Sampled gas extraction

Mounting stubs
with single flange

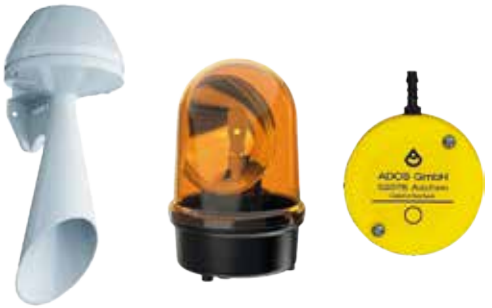
Pressure reducer

Heated extraction pipe

Explosion vent

Respirable dust filter with
filter cartridge

Accessories



GAS WARNING SYSTEMS

Alarm horns

Warning banners

Alarm horn
Ex-version

Rotating mirror lamp
(also available as
Ex-version)

Warning flasher
(also available as
Ex-version)

Room probes

Mains Stand-by
supply unit

Test gas bottle

Pressure reducer