

EasyLine Continuous Gas Analyzers

So smart, they're simple



ABB

Reliable – Economic – Powerful

EasyLine is both a powerful and affordable line of instruments for the monitoring of gas concentrations in numerous applications.

EasyLine is based on the proven and reliable analyzer technology of ABB for extractive continuous gas analysis.

EasyLine is available in two versions, which are optimized for the various installation requirements of the respective location.

Typical applications

- Emission measurement pursuant to the European Directive 2001/80/EC, QAL data comply with the requirements of EN 14181*
- Combustion processes
- Blast furnace and converter gas analysis
- Turbogenerator monitoring
- Industrial gas filling
- Landfill gas monitoring
- Biofermenters
- Ambient air monitoring
- Silo monitoring
- O₂ trace and purity measurement*
- Warehouses and fruit storage



The advantages to you – EasyLine offers:

Proven and reliable measurement technology

- Infrared photometer
- Paramagnetic oxygen analyzer
- Electrochemical oxygen sensor
- Thermal conductivity analyzer for binary gas mixtures
- Trace oxygen analyzer (ZrO₂)*
- Automatic calibration without test gas cylinders for most applications
- Extensive self-diagnosis functions with output of error messages
- Optionally with integrated gas feed
- Measurement of flammable and non-flammable gases without purging
- Available in a 19-inch slide-in housing or in a wall-mount housing

The efficient alternative

EasyLine offers an excellent price-performance ratio.

Convenient operation and configuration

- Simple intuitive operation, menu-driven via five buttons
- Back-lit display with graphics capability
- Information presentation in several languages
- Individual configuration of the inputs/outputs

External control – optional

- RS232/RS485 interface with Modbus or Profibus* protocol for networking with a PC, PLC or process control system
- Modbus DDE driver for integration into a Windows environment for simple reading, archiving and visualization of data

* in preparation

The EasyLine analyzers in detail

Infrared Photometer Uras26

The continuous NDIR industrial photometer can selectively measure concentrations of up to four sample components. The analyzer features gas-filled opto-pneumatic radiation detectors. Detector filling corresponds to the gas being measured. This means that the detector provides optimum sensitivity and high selectivity compared with the other gas components in the sample.

Typical applications

- Emission monitoring to the European Directive 2001/80/EC* including CO₂ measurement in the same analyzer for emissions trading
- Combustion control
- Biofermenters

Thermal conductivity analyzer Caldos27

Small measuring ranges and fast measurements are characteristic for the Caldos27 thanks to its silicon sensor. The smallest volumes and the direct coupling to the gas feed path result in extremely short T₉₀ times. The measuring ranges can be freely selected. The extremely high long-time stability of the sensor largely enables single-point calibration with only one gas.

Typical applications

- Hydrogen purity measurement
- Turbogenerator monitoring
- Inert gas monitoring
- Monitoring of explosive limits



Sample components – smallest measuring ranges

CO	0...100 ppm
CO ₂	0...100 ppm
NO	0...150 ppm
SO ₂	0...100 ppm
N ₂ O	0...100 ppm
CH ₄	0...100 ppm

with stainless steel piping for flammable gas mixtures

Calibration

- Automatic calibration
- Calibration with air and gas-filled calibration cells at the zero and end-point ensure plausible measured values
- Calibration cells with proven stability over many years dispense with the need for expensive test gas cylinders and reliably adjust the sensitivity

Measurement principle

Non-dispersive infrared absorption in the wavelength range $\lambda = 2.5...8 \mu\text{m}$.

Sample components

More than 30 binary gas mixtures are configurable. The active measuring component can be selected out of four gas mixtures.

Calibration

- Zero-point calibration with sample component-free process gas or substitute gas
- End-point calibration with process gas with a known sample gas concentration or with a substitute gas
- Simplified calibration with standard gas avoids the need for separate zero and end-point calibration
- Automatic calibration

Dynamic response

T₉₀ time < 2 s

Oxygen analyzer Magnos206

The Magnos206 is based on the magneto-mechanical measuring principle. Thanks to the short T_{90} time, the Magnos206 is also suitable for measuring rapid changes in the concentration of the sample gas. The ability to freely select measuring ranges and set suppressed ranges means that the analyzer can be easily adapted to specific measurement tasks. Calibration of the zero-point is only required once a month using air or nitrogen.

Typical applications

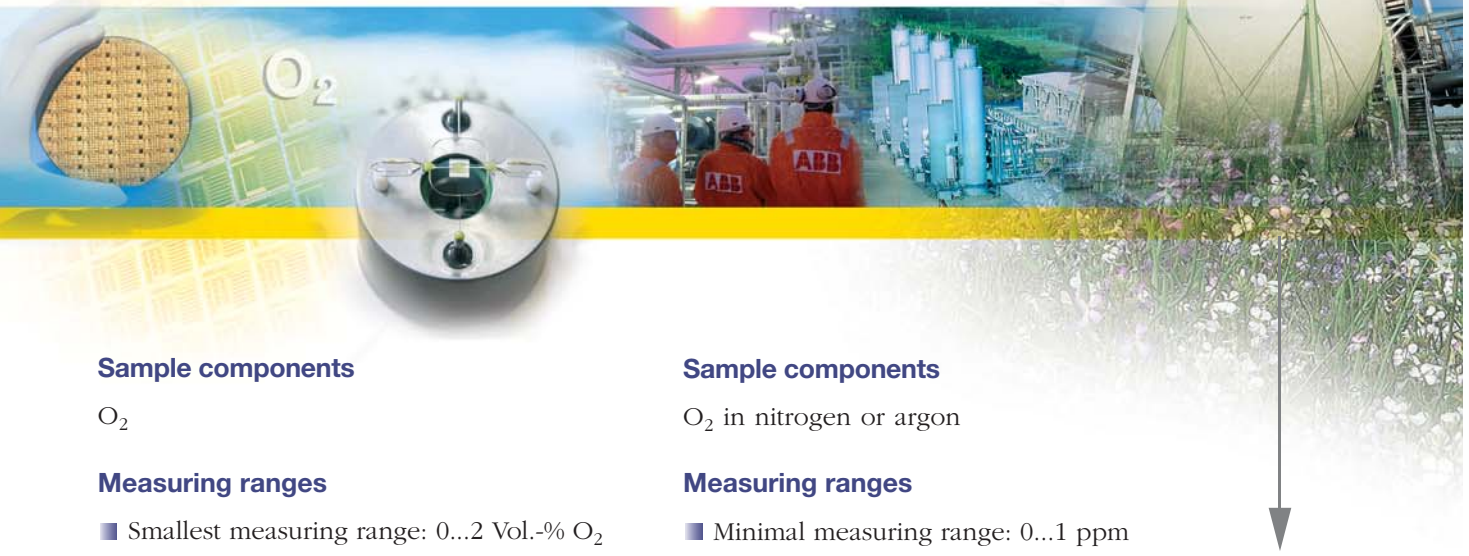
- Oxygen purity measurement
- Air separation plants
- Biogas monitoring
- Process gas monitoring
- Emission monitoring

Trace Oxygen Analyzer* ZO23

The trace oxygen analyzer ZO23 measures the gas concentration with a zirconium dioxide measuring cell. The measuring element consists of ceramics with a platinized surface, conducting oxygen ions at temperatures typically above 600 °C. The measuring cell is catalytically inactive. The measuring method is especially advantageous to small measuring ranges of down to 1 ppm. This makes the analyzer particularly suitable for measuring oxygen in pure gases.

Typical applications

- Purity measurement
- Air separation plants
- Quality control in tank farms



Sample components

O₂

Measuring ranges

- Smallest measuring range: 0...2 Vol.-% O₂
- Largest measuring range: 0...100 Vol.-% O₂
- Measuring range suppression max. 1:50, e.g. 98...100 Vol.-% O₂

Calibration

- Zero- and end-point calibration with nitrogen and air or test gas mixtures is only required once a month
- Zero-point calibration with ambient air
- Automatic calibration

Sample components

O₂ in nitrogen or argon

Measuring ranges

- Minimal measuring range: 0...1 ppm
- Measuring ranges can be user set, factory setting: 0...1/10/100/1000 ppm

Measurement Principle

Measurement of oxygen with catalytically inactive ZrO₂ cell

Dynamic Response

T_{90} time < 60 s when switching from sample to test gas

Calibration

Manual or automatic calibration

Tailored to your measuring tasks

Analyzers combined in one housing

The combination of different analyzers provides optimum flexibility for your application:

- IR photometer and electrochemical oxygen sensor
- IR photometer and paramagnetic oxygen analyzer
- IR photometer and thermal conductivity analyzer

Typical applications

- Emission monitoring with combined CO and O₂ measurement
- Blast furnace gas analysis with combined H₂ and CO/CO₂ measurement for cross-sensitivity correction
- Process analysis

The advantages to you

- Effective and compact solution
- Simplifies the engineering as well as the installation of hoses or pipes in the systems
- Cost-saving from documentation to spare parts inventory



Automatic calibration without test gas cylinders

Automatic calibration and the use of the superior calibration cell technology in the photometer dispenses with the need for expensive test gas cylinders in most applications. No recalibration of the end-point with external test gas is required. Zero-point calibration is performed with ambient air.

19-inch housing with 3 height units

- Ideal for mounting in a rack
- Optionally with an integrated pump for the gas feed-in, a solenoid valve for the connection of test gas (air) and a sample gas filter

Wall-mounted housing, compact and purgeable (IP54)

- Space-saving assembly in analyzer compartments
- Easy to maintain installation on mounting panels

Measurement of flammable gases without case purging

The 19-inch versions of the EasyLine analyzers are particularly suitable for measuring flammable gases in non-explosive environments. For this application, the gas feed paths are made of stainless steel piping or sample gas is passed directly to the analyzer via the gas connections. The natural gas exchange between the EasyLine case and the environment ensure that an LEL is not reached in the case.

- No purging with inert gas necessary
- No expenditure for inert gas provision and monitoring of purging
- Expert opinion issued – German TÜV certificate*

Analyzer technology is our strength

ABB is one of the leading international companies in the field of analyzer technology. Thanks to decades of experience, we can develop innovative instruments and systems to meet your company's individual requirements.

And with a distribution network covering over 40 countries, ABB's know-how is available to you – worldwide.

Naturally, after any purchase after-sales services are just as important to you, as they are to us. That's why we offer you a broad spectrum of specialized services, such as: continuous maintenance, analyzer modifications and troubleshooting etc. We'll be pleased to put together an individual service package for you.

ABB is your partner: From consulting to project planning, from system installation to after-sales service.



Tradition and innovation

More than 75 years of experience in the development and production of analyzers as well as regular contacts with our customers are the basis for our innovative solutions – which have always been the market leader. Under the brandname “Hartmann & Braun”, our products for the continuous measurement of process gases have gained an outstanding international reputation and represent the leading edge of technology. Since then, analyzers with the names Uras, Limas, Caldos and Magnos have enjoyed worldwide acclaim and stand for the highest efficiency. Today, more than 30,000 of these analyzers have been installed in virtually every industry – around the world.

ABB continuously optimizes its products, therefore the technical data in this document is subject to change.

Printed in the Fed. Rep. of Germany (07.2006)

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