AIROPTIC™

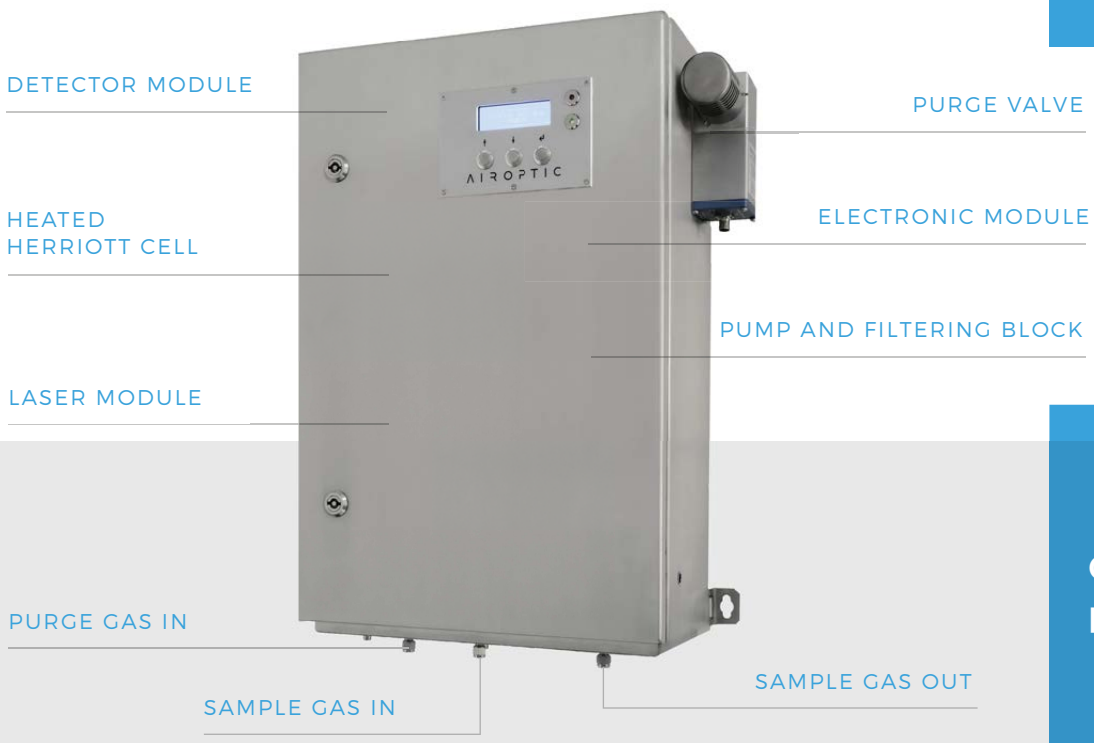
REAL TIME GAS ANALYZERS

GasEye™ Extractive

Versatile gas analyzing tool for industrial process applications

GasEye™ Extractive

The GasEye™ Extractive is a versatile gas analyzing tool for industrial process applications. A process gas sample is continuously fed into the analyzer where it is analyzed in real-time utilizing laser absorption spectroscopy. It can be configured to operate in the near-infrared (NIR), mid-infrared (MIR), and infrared (IR) wavelength range thereby allowing to analyze the majority of gases of interest in the industrial process monitoring. The GasEye™ Extractive Analyzer uses 1 to 8 lasers to analyze one or more gases of interest.



Operating principle

GasEyeTM Extractive is a laser spectrometer that uses single line molecular absorption spectroscopy. A semiconductor laser emits a beam of infrared light which passes through the process and impinges the detector on the receiver side. When the target gas is present the light intensity changes and this can be used to determine the concentration of the measured specimen. The wavelength of the radiation emitted by the laser is chosen to match the specific gas absorption wavelength. The laser continuously scans this single absorption line with a very high spectral resolution. The measurement is very selective due to narrow band nature of the laser light.

Features

CALIBRATION INFORMATION

The GasEye™ Extractive system is factory calibrated using certified gas mixtures. The instrument utilizes an internal in-line reference gas cell for real-time verification of the calibration status. Thus, we can assure long term stability and accuracy and there is no need for calibration of the system in the field as long as the system status is operational.

INTERFERENCES

The GasEye™ Extractive can measure the desired gas components very selectively with nearly no interferences from other gases. Thanks to the full spectral lineshape recovery the GasEye algorithms can actively and automatically correct for any foreign gas interferences.

CHARACTERISTIC

- REAL-TIME SENSING: response time customizable 3 – 120 sec
- HIGH SELECTIVITY: automatic compensation for interference effect from other constituents in the gas sample
- HIGH SENSITIVITY: detection limits down to ppb range
- ROBUSTNESS: wall mounted version IP66 enclosure, suitable for outdoor and indoor installations and harsh environments
- ATEX version available

GasEye™ Extractive 19”RACK analyzer

GasEye™ Extractive 19”RACK analyzer is assembled in a standard 19-inch rack 4U version.
It exists in several various configurations from single gas to multi gas applications.

GasEye™ Extractive models

GasEye™ Extractive Wall Mounted analyzer

GasEye™ Extractive Wall Mounted type analyzer exists in general purpose and hazardous area configuration (version Ex1). Single gas and multi gas models are available. The system is IP66 rated with ambient temperature ranges from -30°C to 60°C and can be mounted outside without a need for a container.

	DIMENSIONS w x h x l [mm]	WEIGHT [kg]	DEGREE OF PROTECTION	INTERNAL PROCESS CELL	GAS CONNECTION	WINDOWS
RACK 19”	482 x 177 x 650	< 30	IP20/aluminium	stainless steel AISI 316	6 mm fitting stainless steel AISI 316	Sapphire
WALL MOUNTED CABINET	430 x 650 x 230	< 45	IP 66 / SS 1.4301 (AISI 304)			

GasEye™ Extractive Ex1 - hazardous areas

PURGING GAS	PRE-PURGE PHASE < 3 MIN FLOW RATES	WORKFLOW PHASE FLOW RATES	INLET PRESSURE
instrument air or N2 (depends on application)	40 - 80 l/min	<7 l/min	1.8 - 2.5 barg nominal 2.0 barg

GasEye™ Extractive Ex1 provides Ex p (purge and pressurization) type of explosion protection.

AMBIENT AND SAMPLE GAS CONDITIONS	RACK 19”	WALL MOUNTED CABINET
AMBIENT TEMPERATURE	5°C to 60°C	-30°C to 60°C
AMBIENT PRESSURE	800 – 1200 hPa	800 – 1200 hPa
AMBIENT HUMIDITY	RH < 90%, non-condensing	RH < 90%, non-condensing
SAMPLE CONDITION	dry, oil and particle free < 0.1 µm	dry, oil and particle free < 0.1 µm
SAMPLE GAS PRESSURE	0 – 0.35 barg	at the inlet: 0.01 – 0.35 barg at the outlet : max 0.3 barg
SAMPLE GAS TEMPERATURE	0°C to 200°C (depends on application)	0°C to 200°C (depends on application)
SAMPLE GAS FLOW	0.5 – 20 Nl/min	1 – 3 Nl/min

ANALYTICAL AND DYNAMIC PERFORMANCE	
DETECTION LIMIT (LOD)	from 0.001 ppm at 20 sec response time
PRECISION	LOD or 1% of the measured value, whichever is larger
ACCURACY	LOD or 2% of the measured value, whichever is larger
ZERO DRIFT AND SPAN DRIFT	negligible
WARM-UP TIME	30 minutes
RESPONSE TIME (T90)	selectable 3 – 120 sec

ELECTRICAL CHARACTERISTICS	RACK 19”	WALL MOUNTED CABINET
POWER INPUT	incl./excl heating 90-240 VAC 24 VDC	230VAC (100~240VAC)
POWER CONSUMPTION	incl./excl heating <300 W / <75 W	<300W (including heater)

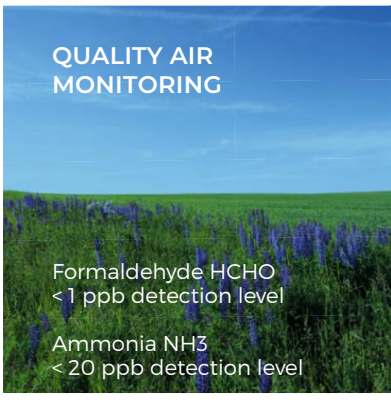
TECHNICAL SPECIFICATION

OUTPUTS	4 x analog output 4 – 20 mA (gas concentration, process transmission, 2 x AUX) – easy user selection via DIP switch between active/passive mode
	8 x digital output (NAMUR)
INPUTS	4 x analog input (4 – 20 mA, process temperature and pressure 2 x AUX) – easy user selection via DIP switch between active/passive mode
	1 x RTD
	8 x digital input
LOCAL USER INTERFACE	Local user interface (LUI) – LCD display witch backlight located on the housing cover
	Ethernet: a) WebServer application– system configuration and data acquisition via a web browser b) Windows based program – GasEye logger for real-time data acquisition
OPTIONAL	Modbus (TCP/IP), Profinet

SAFETY

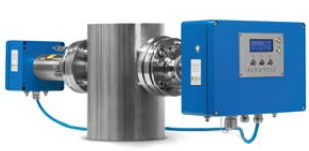
LOW VOLTAGE DIRECTIVE (LVD) 2014/35/EU	PN-EN 61010 – 1:2011, PN-EN 60825 – 1:2014-11
EMC DIRECTIVE 2014/30/EU	EN 61326-1:2013-06
ATEX DIRECTIVE 2014/34/EU	EN IEC 60079-0:2018, EN 60079-2:2014, EN 60079-26:2015, EN 60079-28:2015 Explosion protection (standard version): ATEX II 3G [Ex op is IIC T6 Gc] ATEX II 3D [Ex op is IIIC T85°C Dc] Explosion protection – ATEX Zone 1/21 (optional version): GasEye Extractive Ex1: Ⓔx II 1/2G Ex op is pxb IIC T* Ga/Gb Ⓔx II 1/2D Ex op is pxb IIIC T** Da/Db GasEye Extractive Ex1 ET: Ⓔx II 1/2G Ex db eb h ia ib op is pxb q IIC T* Ga/Gb Ⓔx II 1/2D Ex h ia ib op is tb pxb q IIIC T** Da/Db

Application fields



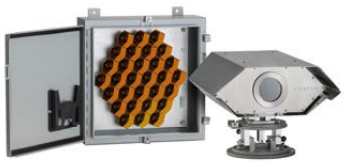
Other products

GasEye™ Cross Duct SG
Single gauge analyzer



GasEye™ Cross Duct MG -
Multi gauge analyzer

GasEye™ Open Path



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