

LFE Product Overview

Process Analytical Instrumentation

Process Gas Analysis



CONTHOS 3 - TCD Process Thermal Conductivity Gas Analyzer

Key Features

- ⇒ Extremely long term stable analysis of H₂ and noble gases in binary and quasi-binary gas mixtures with lowest ranges up to 0 – 5000ppm
- ⇒ Extremely suppressed ranges up to 99.5 - 100%
- ⇒ Ultra-fast response $T_{90} \leq 3$ sec
- ⇒ Highly corrosion resistant TCD cell with Al₂O₃, glass and quartz for process gases with Cl₂, HCl, SO₂, H₂O
- ⇒ Cross compensation of up to 3 components for reduction of interference

Typical Applications

- ⇒ Metallurgical process gases such as blast furnace, converter steel or direct reduction
- ⇒ Steel industry: Heat treatment & hardening
- ⇒ Petrochemistry: Gas processing to synthesis gas, reformer gas & coal gasification
- ⇒ Monitoring of gas purity, pressure swing adsorption, LEL/UEL as well as inert gases
- ⇒ H₂ and O₂ purity in water electrolysis



Explosion proof version CONTHOS 3-TCD Ex p | ATEX

Key Features

- ⇒ Extremely long term stable analysis of H₂ and noble gases in binary and quasi-binary gas mixtures with lowest and extreme suppressed ranges: 99.5 -100%
- ⇒ Ultra-fast response $T_{90} \leq 3$ sec
- ⇒ Highly corrosion and temperature resistant TCD detector with Al₂O₃, glass and quartz
- ⇒ ATEX Ex p version for ex zones 1 and 2
- ⇒ Extremely low purge gas consumption

Typical Applications

- ⇒ Metallurgical process gases such as blast furnace with flammable gases in hazardous areas
- ⇒ Steel industry: Heat treatment & hardening
- ⇒ Petrochemistry: Flammable gases in hazardous areas - Gas processing to synthesis/ reformer gas & coal gasification
- ⇒ Monitoring of gas purity, pressure swing adsorption and LEL/UEL
- ⇒ H₂ and O₂ purity in water electrolysis
- ⇒ Monitoring of hydrogen in turbogenerators

Process Gas Analysis

CONTHOS 3 - TCD HT High Temperature Thermal Conductivity Gas Analyzer

Key Features

- ⇒ High temperature analyzer with thermostat controlled gas paths up to 180°C for high dew points
- ⇒ High temperature analyzer up to 180°C to avoid possible salification
- ⇒ Extremely long term stable analysis of H₂ in binary and quasi-binary gas mixtures
- ⇒ Ultra-fast response $T_{90} \leq 3$ sec
- ⇒ Highly corrosion resistant TCD cell with Al₂O₃, glass and quartz for process gases with Cl₂, HCl, H₂O or NH₃, CO₂, H₂O and H₂

Typical Applications

- ⇒ Metallurgical process gases such as nitration and nitrocarburizing
- ⇒ Heat treatment & hardening with hydrogen, ammonia and carbon dioxide
- ⇒ Chemical processes with hydrogen as well as acidic and alkaline components
- ⇒ Monitoring of processes with hydrogen, water vapor and high dew points

CONTHOS 3-PMD Paramagnetic Oxygen Gas Analyzer

Key Features

- ⇒ Oxygen specific analysis utilizing paramagnetic sensor
- ⇒ Magnetomechanical measuring principle (dumbbell principle)
- ⇒ Temperature controlled for increased stability and performance
- ⇒ Up to 3 measuring ranges
- ⇒ Optional paramagnetic cells for corrosive gases and solvents
- ⇒ Optional intrinsically safe measuring cell for flammable gases

Typical Applications

- ⇒ Fast response process gas measurement
- ⇒ Flue gas control
- ⇒ Inertization plants
- ⇒ Biogas measurement
- ⇒ Air separation, gas purity
- ⇒ Power plants, metallurgical, chemistry, petrochemistry



Process Water Analysis

LFE TOC-810 On-line TOC Analyzer

Key Features

- ⇒ Continuous real time analysis
- ⇒ Continuous fast sample conditioning
- ⇒ Quick response to changes in TOC level
- ⇒ High-temperature oxidation
- ⇒ Extraordinarily stable measuring characteristics
- ⇒ Reliable system calibration
- ⇒ Highest operational reliability
- ⇒ Intelligent self-monitoring
- ⇒ Designed from the ground up for process analysis

Typical Applications

- ⇒ Pure water monitoring (e.g. boiler feed water, condensate)
- ⇒ Production facility monitoring
- ⇒ Drinking water monitoring
- ⇒ Mixed drainage water monitoring
- ⇒ Influent and effluent wastewater treatment monitoring
- ⇒ Airport de-icing water treatment monitoring



USR-F Sample Filter System with Ultrasonic Irradiation



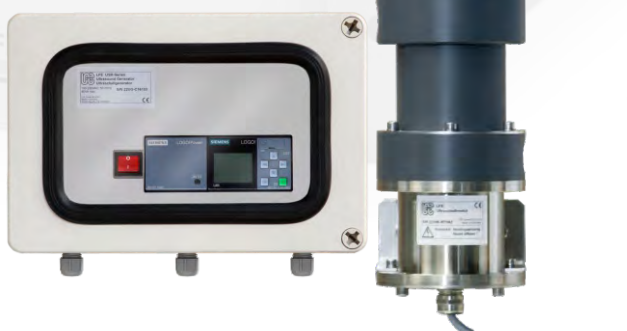
Key Features

- ⇒ Automatic ultrasonic cleaning of filter element
- ⇒ Filter element in cross-flow configuration with pore sizes from 1 μm to 200 μm available
- ⇒ High reliability of the analyzer system
- ⇒ Minimized filter maintenance

Typical Applications

- ⇒ Long-term stable sample filtration for use with process water analyzers
- ⇒ Sampling for analyzers such as TOC, conductivity, pH, dissolved O_2 , turbidity, etc.
- ⇒ Process water with high corrosion potential and degree of contamination

USR-S Ultrasound Cleaning System for process liquid analytical sensors

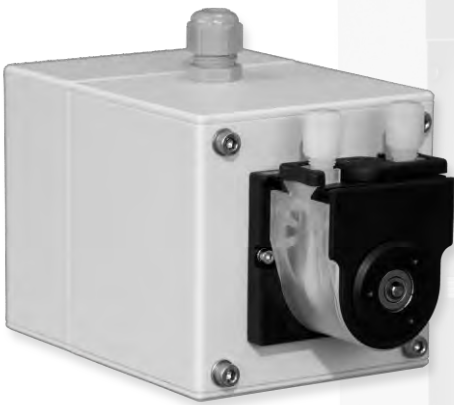


Key Features

- ⇒ Cross-flow vessel for up to 3 process liquid analytical sensors
- ⇒ Automatic ultrasonic irradiation of the sensor vessel
- ⇒ Sensor connections for diverse process liquid sensors
- ⇒ Corrosion resistant transducer membrane made of Hastelloy®
- ⇒ Control unit housed in a water-protected, wall-mounted enclosure

Typical Applications

- ⇒ Long-term stable sensor cleaning for use with process water analyzers
- ⇒ Sampling for analyzers such as conductivity, pH, dissolved O_2 , turbidity, etc.
- ⇒ Process water with high corrosion potential and degree of contamination
- ⇒ Defined and constant cleaning



Series 54 Peristaltic Pump

Key Features

- ⇒ Microprocessor controlled stepper motor
- ⇒ User-selectable rotational speeds
- ⇒ Remote digital control for high degree of flexibility
- ⇒ Protective housing (IP 65)
- ⇒ Quick and easy change of tubing
- ⇒ Maintenance free
- ⇒ Self-priming

Typical Applications

- ⇒ For process analytical applications
- ⇒ Sample transport
- ⇒ Condensate transport
- ⇒ Sample dilution
- ⇒ Sample metering
- ⇒ Back-flushing of sample lines



Analysis Cells for Process Photometers

Key Features

- ⇒ Compatible with Emerson Process Management's BINOS® photometer system
- ⇒ High corrosion resistance
- ⇒ Continuous operating temperature up to 160°C
- ⇒ Suitable for UV, VIS and IR process photometry
- ⇒ Available in various optical lengths from 10 to 200mm



pControl 2F Backpressure Controller for process gas analysis instrumentation

Key Features

- ⇒ Eliminate pressure errors at the source
- ⇒ Quick and precise pressure control
- ⇒ Extremely wide range of gas flow
- ⇒ A single pControl-system is suitable for use with multiple gas analyzers

Typical Applications

- ⇒ Precise measurement at constant pressure instead of insufficient or impossible pressure correction algorithms
- ⇒ Long-term stable pressure control also for gases with high corrosion potential
- ⇒ Sample gas return into process at defined higher pressure
- ⇒ Defined setpoint pressure to dispose of flammable and toxic sample gases into a flare or scrubber

Note:

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