

# SERVOMEX PRODUCT GUIDE 2017

OUR INDUSTRY-LEADING GAS ANALYZER RANGE AND SYSTEMS, MATCHED TO YOUR INDUSTRY REQUIREMENTS

ALL OUR ANALYZERS INCLUDE HUMMINGBIRD SENSING TECHNOLOGY  
WINNERS OF THE QUEEN'S AWARD FOR ENTERPRISE



POWER GENERATION

HYDROCARBON  
PROCESSING

SPECIALIST  
APPLICATIONS

METALS & MINING

INDUSTRIAL GASES



[SERVOMEX.COM](http://SERVOMEX.COM)

**SERVOMEX**

A MEASUREABLE ADVANTAGE

# > GAS MEASUREMENT GUIDE

SERVOTOUGH	NH <sub>3</sub>	Ar	CO	CO <sub>2</sub>	He	C1-C6	NMHC	H <sub>2</sub>	HCl	HF	H <sub>2</sub> S	CH <sub>4</sub>	NO	N <sub>2</sub>	N <sub>2</sub> O	O <sub>2</sub>	C <sub>3</sub> H <sub>6</sub>	THC	H <sub>2</sub> O	SO <sub>2</sub>	Page
Oxy 1800																%					04
Oxy 1900																%					04
OxyExact 2200																%					04
SpectraScan 2400			%CV	%CV		%CV					%CV										05
SpectraExact 2500	%		%ppm	%ppm		%		%ppm			%	%ppm		%ppm			%	%	%		05
FluegasExact 2700			ppm													%					05
LaserSP 2930				%ppm					ppm	ppm	ppm								%		06
LaserCompact 2940				%ppm					ppm	ppm	ppm								%ppm		06
LaserExact 2950	ppb		ppm	ppm					ppb	ppb	ppm					ppm			ppm		06
DF-140E																ppm					07
DF-320E																ppm/b					07
DF-340E																ppm/b					07
DF-370E																ppm/b					08
Laser 3 Plus	ppm																				08
Laser 3 Plus Combustion			ppm									%				%					08
Laser 3 Plus Process			ppm													%					09
AquaXact 1688																			ppmvdp		09
H2Scan								%													09

SERVOPRO	NH <sub>3</sub>	Ar	CO	CO <sub>2</sub>	He	C1-C6	NMHC	H <sub>2</sub>	HCl	HF	H <sub>2</sub> S	CH <sub>4</sub>	NO	N <sub>2</sub>	N <sub>2</sub> O	O <sub>2</sub>	C <sub>3</sub> H <sub>6</sub>	THC	H <sub>2</sub> O	SO <sub>2</sub>	Page
MonoExact DF150E																ppm/b					10
MonoExact DF310E																%ppm					10
4100			%ppm	%ppm								%ppm			ppm	%ppm					10
4200/4210			%ppm	%ppm								%ppm			ppm	%					11
4900			%ppm	%								ppm	ppm		ppm	%				ppm	11
FID																		ppm			11
Chroma	%ppm/b	%ppm/b	%ppm/b	%ppm/b	%ppm/b	ppm	%ppm/b					%ppm/b		%ppm/b	%ppm/b						12
Plasma														ppm							12
MultiExact 5400			ppm	ppm								ppm			ppm	%ppm					12
NanoChrome	ppb/t	ppb/t	ppb/t			ppb/t	ppb/t					ppb/t		ppb/t		ppb/t					13
MonoExact	%				%			%						%							13

SERVOFLEX	NH <sub>3</sub>	Ar	CO	CO <sub>2</sub>	He	C1-C6	NMHC	H <sub>2</sub>	HCl	HF	H <sub>2</sub> S	CH <sub>4</sub>	NO	N <sub>2</sub>	N <sub>2</sub> O	O <sub>2</sub>	C <sub>3</sub> H <sub>6</sub>	THC	H <sub>2</sub> O	SO <sub>2</sub>	Page
Micro i.s 5100			%	%												%					14
MiniMP 5200				%												%					14
MiniHD 5200			%	%												%					14
MiniFoodPack 5200				%												%					15

DELTA F	NH <sub>3</sub>	Ar	CO	CO <sub>2</sub>	He	C1-C6	NMHC	H <sub>2</sub>	HCl	HF	H <sub>2</sub> S	CH <sub>4</sub>	NO	N <sub>2</sub>	N <sub>2</sub> O	O <sub>2</sub>	C <sub>3</sub> H <sub>6</sub>	THC	H <sub>2</sub> O	SO <sub>2</sub>	Page
DF-550E																ppm/b					15
DF-560E																ppm/b/t					15
DF-730																			ppm/b		15
DF-740																			ppm/b		15
DF-745																			ppm/b		15
DF-745SG Max																			ppm/b		15
DF-749																			ppm/b/t		15
DF-750																			ppm/b/t		15
DF-760E																ppm/b/t			ppm/b/t		15

GAS DETECTION	NH <sub>3</sub>	Ar	CO	CO <sub>2</sub>	He	C1-C6	NMHC	H <sub>2</sub>	HCl	HF	H <sub>2</sub> S	CH <sub>4</sub>	NO	N <sub>2</sub>	N <sub>2</sub> O	O <sub>2</sub>	C <sub>3</sub> H <sub>6</sub>	THC	H <sub>2</sub> O	SO <sub>2</sub>	Page
OxyDetect																%					13

MEASUREMENT TYPE: PERCENT/PARTS PER MILLION/PER BILLION/PER TRILLION/BY VOLUME/DEW POINT

# > WELCOME TO SERVOMEX

## THE WORLD'S LEADING MANUFACTURER OF GAS ANALYZERS AND GAS ANALYSIS SYSTEMS.

Developed and manufactured in our UK and Americas Technical Centers, Servomex analyzers are hand-built to precise requirements. This ensures every product we make provides performance optimized to the needs of each customer process.

Built around the stable, accurate and reliable gas measurements provided by our world-leading Hummingbird sensing technologies, our analyzers incorporate the latest advances in hardware design and software control into resilient designs optimized for hazardous or safe area use.

Once manufactured, our analyzers can integrate into existing systems or be designed into a complete system manufactured to equally high standards in our global network of System Integration facilities.

We build every analyzer to deliver a long lifetime of performance. This ethos is maximized through our global Service offer, which provides a complete support service for your analyzer, from commissioning to regular maintenance.



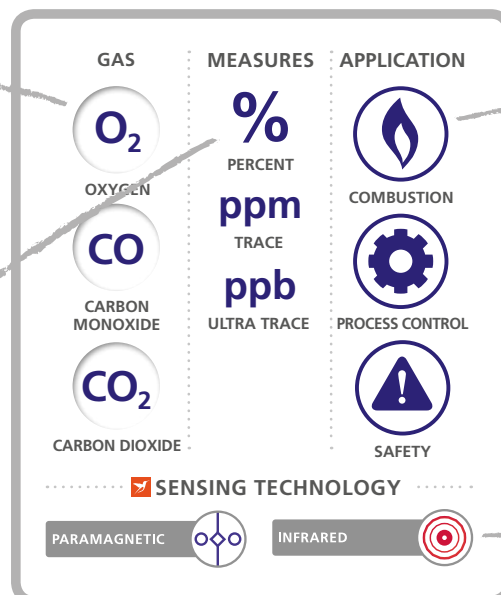
## FIND YOUR PRODUCT NOW

### > 'HOW TO' GUIDE

#### HOW TO USE AND GET THE MOST OUT OF THIS PRODUCT GUIDE

*Some analyzers are optimized for single gas measurements while others monitor multiple gas types*

*We offer all measurement ranges from percentage to ultra trace parts per trillion analysis.*



*We identify which application types the analyzer is suitable for operating in.*

*The Hummingbird sensing technologies used are listed.*

# SERVOTOUGH Oxy 1800





SAFE AREA



## ACCURATE AND STABLE SAFE AREA O<sub>2</sub> ANALYZER

Designed to reliably measure percent O<sub>2</sub> in many safety critical industrial applications, the Oxy 1800 is a stable, accurate and highly specific O<sub>2</sub> analyzer for safe area use.

- Internal/external use (IP66/NEMA 4X rated)
- Special version for solvent bearing samples
- Range of alarm outputs aids integration with other systems

GAS	MEASURES	APPLICATION
 O <sub>2</sub> OXYGEN	 % PERCENT	 PROCESS CONTROL
		 SAFETY

### SENSING TECHNOLOGY

PARAMAGNETIC 

# SERVOTOUGH Oxy 1900





HAZARDOUS AREA



## AWARD-WINNING PARAMAGNETIC DIGITAL O<sub>2</sub> ANALYZER DESIGNED FOR HAZARDOUS AREA USE

Offering an exceptional range of industry-standard options and three unique, ground-breaking functions, the Oxy 1900 O<sub>2</sub> gas analyzer sets new standards of flexibility, stability and reliability from a single, cost-effective unit.

- Can be used in Safe Area to Zone 1/Division 1 hazard rated locations
- Heated sample cell allowing simplified sample system requirements
- Unique Servomex Flowcube flow sensor technology for improved safety

GAS	MEASURES	APPLICATION
 O <sub>2</sub> OXYGEN	 % PERCENT	 PROCESS CONTROL
		 SAFETY

### SENSING TECHNOLOGY

PARAMAGNETIC 

# SERVOTOUGH OxyExact 2200





HAZARDOUS AREA



## HIGH SPEC PROCESS O<sub>2</sub> ANALYZER OFFERS SAFE OR HAZARDOUS AREA CONTROL WITH UP TO SIX TRANSMITTERS

The OxyExact 2200 high specification O<sub>2</sub> analyzer offers an unrivaled combination of precision, flexibility and performance for optimum process and safety control. The OxyExact can be configured with a safe or hazardous area control unit with up to six transmitters.

- Zone 1 certified to ATEX Cat 2, IECEx and FM/CSA Class 1 Div1
- Three enclosure systems allows sampling of any flammable gas up to 100% O<sub>2</sub> and pressures of up to 40psi
- High temperature version eliminates the need to condense hot sample prior to analysis

GAS	MEASURES	APPLICATION
 O <sub>2</sub> OXYGEN	 % PERCENT	 PROCESS CONTROL
		 SAFETY

### SENSING TECHNOLOGY

PARAMAGNETIC 

## SERVOTOUGH SpectraScan 2400

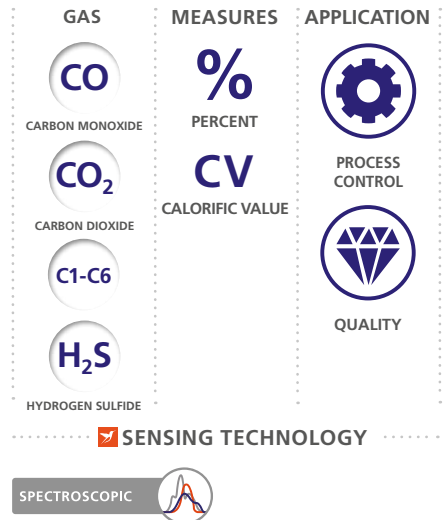
HAZARDOUS AREA



### REVOLUTIONARY INLINE REAL-TIME ANALYSIS OF HYDROCARBON COMPONENTS C1-C6

A real time optical analyzer utilizing the Precise field proven optical bench, the SpectraScan 2400 delivers a breakthrough capability in the continuous analysis of light hydrocarbons C1-C6.

- North American Cat 1, Div 2 ATEX Cat 3 IECEx Zone2
- Tunable band-pass filter enables simultaneous scanning of selected wavelength bands for gases including Methane, Ethane, Propane and iso-Butane
- Unique tunable filter process with IR photometer technology delivers industry-leading interference compensation



## SERVOTOUGH SpectraExact 2500

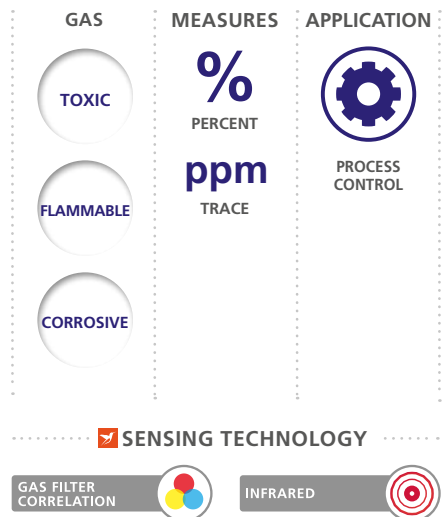
HAZARDOUS AREA



### RUGGED PHOTOMETRIC GAS ANALYZER FOR DEMANDING PROCESS APPLICATIONS

Servomex's iconic industry-leading photometric analyzer delivers flexible single and multi-component gas analysis capability for corrosive, toxic and flammable sample streams. The SpectraExact 2500's reliable, accurate and stable real-time online process analysis makes it ideal for a range of process, combustion and emissions gas analysis applications.

- ATEX, IECEx and North American hazardous area approvals
- Easy integration with DCS – from 4-20mA to Modbus TCP
- Sample cell and electronics segregated – for easy maintenance and safe operation



## SERVOTOUGH FluegasExact 2700

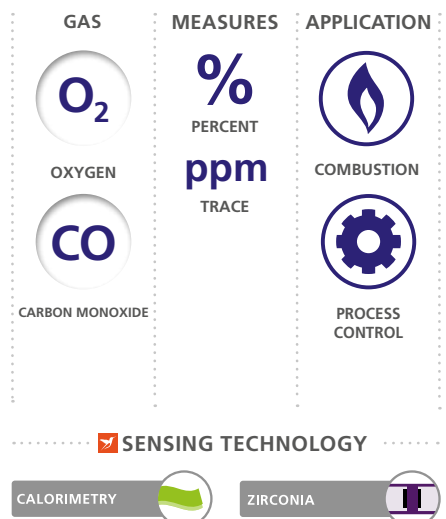
HAZARDOUS AREA



### ADVANCED FLUEGAS ANALYZER FOR HIGH-TEMPERATURE MEASUREMENT OF O<sub>2</sub> AND COMBUSTIBLES

Designed to measure O<sub>2</sub> and COe in flue gases for improved combustion efficiency and reduced emissions, the FluegasExact 2700 gas analyzer is designed to suit the most demanding needs of combustion efficiency applications in the Power Generation and Process Industries.

- ATEX Cat. 3, IECEx Zone 2 & North America Class I, Div. 2
- Unique Flowcube flow sensor technology enables positive flow conditions to be validated
- Sulfur-resistant combustibles sensor enables sensor to operate at elevated sulfur levels



# SERVOTOUGH LaserSP 2930

HAZARDOUS AREA



## HIGH-SENSITIVITY CROSS-STACK TDL ANALYZER

A high performance gas analyzer designed for continuous in-situ monitoring, the LaserSP 2930 delivers a fast response time and highly stable performance. Suitable for measuring a range of gases including HCl, HF, CO<sub>2</sub>, H<sub>2</sub>O, H<sub>2</sub>S, HCN, and other hydrocarbons, the LaserSP is ideal for a wide range of process, combustion control and emissions applications.

- Designed for Zone 1 and Zone 2 hazard rated (gas/dust) locations
- In-situ with no sample conditioning delivers reliable operation
- Wavelength Modulated Spectroscopy provides wide dynamic range and lowest cross interference

GAS

MULTIPLE

MEASURES

%  
PERCENT  
ppm  
TRACE

APPLICATION



PROCESS  
CONTROL



EMISSIONS

SENSING TECHNOLOGY

TUNABLE  
DIODE LASER



# SERVOTOUGH LaserCompact 2940

HAZARDOUS AREA



## SHORT PATH LENGTH TDL ANALYZER

Optimized for measurement across pipes and along short measurement cells and able to measure through very thin nozzles, reducing or even eliminating consumption of purge gas, the LaserCompact 2940 delivers the fast response time, highly stable performance and minimum sample conditioning advantages of TDL technology.

- ATEX, IECEx and North American hazardous area approvals. ATEX Cat 3 (Gases) and Cat 2 (Dusts) IECEx Zone 2 and Zone 21. CSA Divisions and Zones (Gas and Dust)
- Line width correction delivers accurate measurement with variations in matrix
- In-situ with low purge gas consumption

GAS

MULTIPLE

MEASURES

%  
PERCENT  
ppm  
TRACE

APPLICATION



PROCESS  
CONTROL



QUALITY

SENSING TECHNOLOGY

TUNABLE  
DIODE LASER



# SERVOTOUGH LaserExact 2950

HAZARDOUS AREA



## EXTRACTIVE TDL TRACE MULTIGAS ANALYZER, DESIGNED FOR MEASURING TRACE GASES OFFLINE

Specifically designed for extractive trace analysis applications, the LaserExact 2950's TDL technology offers unsurpassed low ppb detection limits for most gases, making it ideal for the measurement of trace gases offline.

- Zone 2/ Division 2 hazard rated locations and use without purge
- Advanced multipass cell delivers ppb or low ppm detection limits
- Innovative PeakLock pattern recognition line tracking eliminates drift over extended operational periods

GAS

MULTIPLE

MEASURES

ppb  
ULTRA TRACE  
ppm  
TRACE

APPLICATION



PROCESS  
CONTROL



QUALITY

SENSING TECHNOLOGY

TUNABLE  
DIODE LASER





## SERVOTOUGH DF-140E

HAZARDOUS AREA



### RELIABLE RESULTS IN A TESTING RANGE OF ENVIRONMENTS

The DF-140E allows for reliable oxygen measurement in a wide variety of environments, including outdoors and in explosive environments with a NEMA 7 remote sensor enclosure. Using the revolutionary non-depleting E-Sensor, the DF-140E delivers reliable readings without frequent recalibration and periodic sensor replacement.

- Long-term reliability and stability with minimal maintenance
- Durability – can be used in Class 1, Division 1 or 2 areas
- STAB-EL option allows for accurate measurement in the presence of acid gases

GAS



OXYGEN

MEASURES

ppm  
TRACE

APPLICATION



PROCESS  
CONTROL



QUALITY

✓ SENSING TECHNOLOGY

COULOMETRIC



## SERVOTOUGH DF-320E

HAZARDOUS AREA



### HIGH RELIABILITY TRACE AND PERCENT O<sub>2</sub> MEASUREMENTS IN HAZARDOUS AREA LOCATIONS

Designed for use in harsh and hazardous areas, the DF-320E uses Servomex's unique, non-depleting Coulometric sensor technology to give highly stable O<sub>2</sub> measurements, making it ideal for applications including hydrogen, propene and polyethylene production, oil refining and petrochemical process monitoring.

- Ideal analytical solution for applications including H<sub>2</sub>, C<sub>3</sub>H<sub>6</sub> and PE production, oil refining, and petrochemical process monitoring
- Microprocessor-driven for easy configuration and maintenance
- Coulometric sensor delivers accurate results with no sensor drifting, false low readings, or frequent calibration requirements

GAS



OXYGEN

MEASURES

ppb  
ULTRA TRACE  
ppm  
TRACE

APPLICATION



PROCESS  
CONTROL



QUALITY

✓ SENSING TECHNOLOGY

COULOMETRIC



## SERVOTOUGH DF-340E

HAZARDOUS AREA



### HIGH SENSITIVITY TRACE/ PERCENT COULOMETRIC OXYGEN ANALYZER CERTIFIED FOR HAZARDOUS AREA USE

Designed for heated or external locations, the DF-340E remains stable in changing sample and flow rate conditions, and is designed to provide measurements of trace or percent level oxygen in pure gas streams and multigas backgrounds. It is ideal for upset prone conditions.

- Coulometric sensing ideal for upset prone applications and compensates for sample and flow rate fluctuations
- Suitable for outdoor installation, with NEMA 4-rated sensor enclosure options
- Multiple background gas stream monitoring, with simplified ongoing maintenance requirements

GAS



OXYGEN

MEASURES

ppb  
ULTRA TRACE  
ppm  
TRACE

APPLICATION



PROCESS  
CONTROL



QUALITY

✓ SENSING TECHNOLOGY

COULOMETRIC



# SERVOTOUGH DF-370E




HAZARDOUS AREA



## DUSTPROOF, WATERPROOF, EXPLOSION-PROOF TRACE O<sub>2</sub> MEASUREMENT FOR POLYMER GRADE FEEDSTOCKS AND OTHER HIGH PURITY GASES

Microprocessor-driven for easy configuration and maintenance, the rugged DF-370E is optimized for the accurate measurement of trace and percent level O<sub>2</sub> in hazardous environments, with both the control unit and remote sensor housed in a durable NEMA 7 enclosure.

- Highly stable Coulometric sensor requires annual SPAN calibration only, with no programmed cell replacement needed
- Low detection limit of 10 ppb when operating on 0-1 ppm or lower range
- Suitable for multiple background gases with a single unit

GAS	MEASURES	APPLICATION
 O <sub>2</sub> OXYGEN	<b>ppb</b> ULTRA TRACE <b>ppm</b> TRACE	 PROCESS CONTROL  QUALITY

### SENSING TECHNOLOGY

COULOMETRIC



# SERVOTOUGH Laser 3 Plus




HAZARDOUS AREA



## WORLD-LEADING NH<sub>3</sub> MEASUREMENT, OPTIMIZED FOR AMMONIA SLIP DeNOx APPLICATIONS

This TDL analyzer specifically optimized for ammonia slip measurement provides all the benefits of Servomex's TDL technology in a compact, light unit, offering unparalleled installation flexibility plus cost and performance benefits.

- High measurement reliability utilizing Servomex's own line lock cuvette technology
- ATEX, IECEx and North American hazardous area approvals
- A compact analyzer specifically optimized for the fast, accurate and responsive measurement of NH<sub>3</sub>
- Ideal for slip ammonia application on power plants and fired heaters

GAS	MEASURES	APPLICATION
 NH <sub>3</sub> AMMONIA DeNOx	<b>ppm</b> TRACE	 PROCESS CONTROL  EMISSIONS

### SENSING TECHNOLOGY

TUNABLE DIODE LASER



# SERVOTOUGH Laser 3 Plus Combustion






HAZARDOUS AREA



## THE REVOLUTIONARY COMPACT COMBUSTION ANALYZER OPTIMIZED FOR CO, O<sub>2</sub>, OR CO + CH<sub>4</sub> MEASUREMENTS

Containing all the benefits of Servomex's TDL technology in a light, compact unit, with unmatched installation flexibility plus cost and performance benefits, this analyzer is optimized for fast, accurate and responsive measurements in combustion and process control, making it a must for safety applications.

- High safety integrity utilizing Servomex's own line lock cuvette technology
- Compact size means quick and easy installation by one person with on-board display negating the need for laptop configuration
- ATEX, IECEx and North American hazardous area approvals. Approved for process Zone 2. SIL 2 assessed and CE marked
- Optimized for combustion processes

GAS	MEASURES	APPLICATION
 O <sub>2</sub> OXYGEN	<b>%</b> PERCENT <b>ppm</b> TRACE	 PROCESS CONTROL  COMBUSTION
 CO CARBON MONOXIDE		
 CO+CH <sub>4</sub> CARBON MONOXIDE + METHANE		

### SENSING TECHNOLOGY

TUNABLE DIODE LASER





## SERVOTOUGH Laser 3 Plus Process

HAZARDOUS AREA



### THE WORLD'S SMALLEST TDL GAS ANALYZER, OPTIMIZED FOR PROCESS O<sub>2</sub> MEASUREMENT

All the benefits of Servomex's TDL technology in a small, light unit offering unparalleled installation flexibility plus cost and performance benefits. Optimized for the fast, accurate and responsive measurement of process oxygen in hot or hazardous conditions.

- High safety integrity utilizing Servomex's own line lock cuvette technology
- ATEX, IECEx and North American hazardous area approvals. Approved for process Zone 2. SIL 2 assessed and CE marked
- Quick and easy installation by one person with on-board display negating the need for laptop configuration
- Suitable for a range of combustion and process control applications

GAS



OXYGEN



CARBON MONOXIDE

MEASURES

%  
PERCENT

ppm  
TRACE

APPLICATION



PROCESS CONTROL



COMBUSTION

✓ SENSING TECHNOLOGY

TUNABLE DIODE LASER



## SERVOTOUGH AquaXact 1688

HAZARDOUS AREA



COMING  
2017

### A FAST, ACCURATE AND RESILIENT MOISTURE MEASUREMENT SOLUTION

The AquaXact 1688 is a rugged ultra-thin film aluminum oxide moisture sensor that enables the measurement of moisture in a wide variety of gas phase process applications, such as glove boxes, air separation units, natural gas processing, transportation, and instrument air, with no calibration required after sensor replacement or dry-out.

- Functions as a standalone 4-20 mA transmitter or remotely interfaces with SERVOPRO MonoExact DF310E multichannel gas analyzer system
- High-performance field-replaceable sensor element unaffected by condensation and liquid water
- Stainless steel, weatherproof casing (which is Class 1 Division 2) enables operation in ambient temperatures ranging from -10C to +70C

GAS



WATER

MEASURES

DEW POINT  
ppmv

APPLICATION



PROCESS CONTROL

✓ SENSING TECHNOLOGY

Ultra-thin film Al<sub>2</sub>O<sub>3</sub>

## H2Scan

HAZARDOUS AREA



### EXPLOSION-PROOF IN-LINE HYDROGEN PROCESS ANALYZER, USING A SOLID-STATE, NON-CONSUMABLE SENSOR CONFIGURED TO OPERATE IN PROCESS GAS STREAMS

The H2Scan hydrogen process analyzer features thin film technology that provides a direct hydrogen measurement that is not cross-sensitive to other gases.

- UL Class 1, Division 1, Groups B, C, D. ATEX & CSA certifications
- Easily configurable alongside SERVOTOUGH SpectraScan 2400
- Simple system integration

GAS



HYDROGEN

MEASURES

%  
PERCENT

APPLICATION



PROCESS CONTROL



QUALITY

✓ SENSING TECHNOLOGY

H2Scan thin film

## SERVOPRO MonoExact DF150E

SAFE AREA



### THE NEXT STEP IN THE EVOLUTION OF OXYGEN ANALYZERS FOR INDUSTRIAL GAS APPLICATIONS

With a brand new digital, programmable touchscreen and easier navigation, the MonoExact DF150E combines the reliability of Servomex's tried and tested Coulometric oxygen sensor with a more user-friendly package.

- Advanced touchscreen GUI for intuitive hands-on setup and operation
- Back-compatible with DF-150E platform, including hardware wiring inputs and gas inlets
- Servomex proprietary software makes reporting and parameter control simple



## SERVOPRO MonoExact DF310E

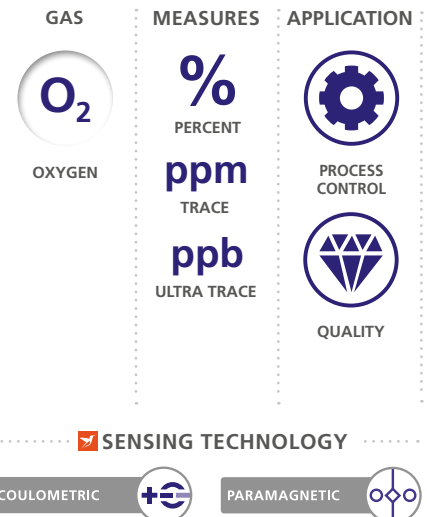
SAFE AREA



### NEXT-GENERATION DIGITAL OXYGEN ANALYZER DESIGNED FOR INDUSTRIAL GAS APPLICATIONS

Designed specifically to accurately measure oxygen in industrial gas applications, the MonoExact DF310E is a next-generation digital oxygen analyzer that combines precision trace-level measurement with new performance benefits and extended digital communications compatibility.

- Advanced touchscreen GUI for intuitive hands-on setup and operation
- Back-compatible with DF-310E platform, including hardware wiring inputs and gas inlets
- Field-proven Servomex Coulometric electrochemical performance and reliability



## SERVOPRO 4100

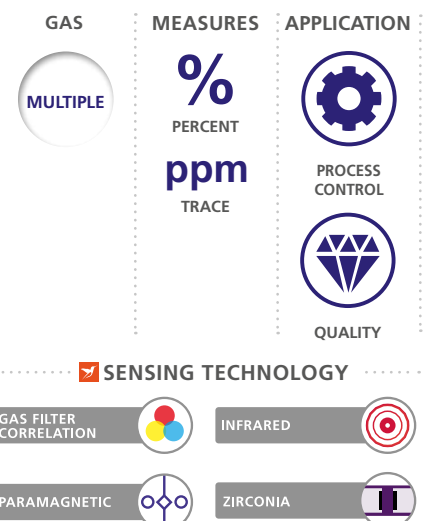
SAFE AREA



### ANALOG MULTIGAS ANALYZER OFFERING WIDE RANGE OF TRACE AND PERCENT MEASUREMENTS

Offering the capability of measuring  $CO$ ,  $CO_2$ ,  $N_2O$ ,  $CH_4$ ,  $O_2$  at trace levels and  $CO$ ,  $CO_2$  and  $CH_4$  at percent levels - as well as an  $O_2$  purity measurement - the flexibility of the SERVOPRO 4100 meets a wide range of process control and product qualification needs.

- FDA validated for medical oxygen and nitrogen production. European Pharmacopoeia compliant
- Simultaneous measurement of up to four gas streams
- Independent auto-calibration of all measurements with up to 8 isolated analog outputs and up to 12 relays with follow or freeze option



# SERVOPRO 4200/4210

SAFE AREA



## GAS ANALYZER SUITABLE FOR FLAMMABLE GAS MIXTURES

The SERVOPRO 4200/4210 multigas analyzer is designed to monitor flammable gas samples including H<sub>2</sub>/CO, 'HyCO' or 'Syngas' mixtures for trace level contaminants and percent level components. The 4200/4210 offers oxygen control using Servomex's unique Paramagnetic cell, trace level measurement of CO, CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> and percent levels of CO, CO<sub>2</sub>, CH<sub>4</sub> using photometric sensor technology.

- In compliance with Low Voltage, EMC and applicable Directives
- Measures up to four gases simultaneously
- RS232 / RS485 and Modbus communications

GAS

MULTIPLE

MEASURES

%  
PERCENT  
ppm  
TRACE

APPLICATION



PROCESS  
CONTROL



QUALITY

### SENSING TECHNOLOGY

GAS FILTER  
CORRELATION



INFRARED



PARAMAGNETIC



# SERVOPRO 4900

SAFE AREA



## CONTINUOUS EMISSIONS MONITORING (CEMS) ANALYSIS OF MULTIPLE FLUE GAS COMPONENTS

The SERVOPRO 4900 is specifically designed for Continuous Emissions Monitoring, where legislation requires the measurement of several gas components in flue gas. The 4900 offers multigas capability for pollutants, greenhouse gases and reference O<sub>2</sub>, including CO, CO<sub>2</sub>, NO, SO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O.

- MCERTS / TÜV approved measurements
- Low maintenance and cost of ownership
- Easy integration with other systems

GAS

MULTIPLE

MEASURES

%  
PERCENT  
ppm  
TRACE

APPLICATION



EMISSIONS

### SENSING TECHNOLOGY

GAS FILTER  
CORRELATION



INFRARED



PARAMAGNETIC



# SERVOPRO FID

SAFE AREA



## TRACE HYDROCARBON ANALYZER IDEAL FOR ASU SAFETY AND QUALITY CONTROL APPLICATIONS

A Flame Ionization Detector analyzer designed to assure safe operation for cryogenic air separation plants, the FID ensures the level of Total Hydrocarbons (THC) is maintained below flammable limits, as well as providing quality control in pure O<sub>2</sub>, N<sub>2</sub>, Ar, Air, He and CO<sub>2</sub>.

- Electrical safety to IEC 61010-1. In compliance with Low Voltage, EMC and applicable Directives
- Excellent output resolution over three operating ranges
- Electronic flow controllers for air, fuel & sample for no dependency to atmospheric pressure variations and inlet pressure variation

GAS

THC

TOTAL  
HYDROCARBONS

MEASURES

ppm  
TRACE

APPLICATION



SAFETY



QUALITY

### SENSING TECHNOLOGY

FLAME IONISATION  
DETECTOR



## SERVOPRO Chroma

SAFE AREA



### HIGHLY VERSATILE TRACE GAS ANALYZER PLATFORM CONFIGURABLE TO A WIDE RANGE OF APPLICATIONS

Offering a unique, non-depleting plasma emission detector, the Chroma (K4000) analyzer is one of the most versatile gas analyzers for trace gas measurement available. Most applications will be satisfied by a single 4U rack analyzer configuration, making the Chroma a compact, cost effective solution for continuous process control or quality monitoring.

- PlasmaHC measurement system requires no FID for THC measurement
- Fully automated - tune to the application - system for unique simplicity of use
- Stand-alone systems requires no third-party software or computer to operate

GAS	MEASURES	APPLICATION
MULTIPLE	% PERCENT ppm TRACE ppb ULTRA TRACE	QUALITY PROCESS CONTROL

#### SENSING TECHNOLOGY

GAS CHROMATOGRAPHY	PLASMA
FLAME IONISATION DETECTOR	THERMAL CONDUCTIVITY

## SERVOPRO Plasma

SAFE AREA



### RELIABLE MONITORING OF NITROGEN IN ARGON AND HELIUM, OPTIMIZED FOR ASU PLANT OPERATIONS

Specifically designed for the continuous monitoring of N<sub>2</sub> in Ar or He or both, the Plasma's unique plasma emission detector provides an accurate, highly stable and reliable measurement ideal for the requirements of ASU plant operators.

- Electrical safety to IEC 61010-1: Ed 3. In compliance with Low Voltage, EMC and applicable Directives
- Wide measurement range - 0-1ppm, 0-10ppm, 0-100ppm (higher on request)
- Electronic flow control system for low flow consumption and reading stability

GAS	MEASURES	APPLICATION
N <sub>2</sub> NITROGEN	ppm TRACE	QUALITY

#### SENSING TECHNOLOGY

PLASMA
--------

## SERVOPRO MultiExact 5400

SAFE AREA



### DIGITAL MULTIGAS ANALYZER, OPTIMIZED FOR WIDE RANGE OF ASU MEASUREMENTS

Combining industry-leading performance and a range of new and enhanced functions as standard, the MultiExact offers air separation plants a multigas analyzer specifically optimized to industry requirements - with GFx and Paramagnetic measurements now augmented by Servomex's revolutionary TCD measurement sensing technology.

- IEC 61010-1. European Pharmacopeia compliant. US Pharmacopeia compliant (O<sub>2</sub>). In compliance with Low Voltage, EMC and applicable Directives
- TruRef technology offers class leading measurements for Ar, He and N<sub>2</sub>
- Options include digital communication options, an integrated valve block function and unique Servomex Flowcube flow sensor technology

GAS	MEASURES	APPLICATION
MULTIPLE	% PERCENT ppm TRACE	PROCESS CONTROL QUALITY

#### SENSING TECHNOLOGY

GAS FILTER CORRELATION	ZIRCONIA
PARAMAGNETIC	THERMAL CONDUCTIVITY

# SERVOPRO NanoChrome

SAFE AREA



## SUB-PPB TRACE MEASUREMENT OF H<sub>2</sub>, CH<sub>4</sub>, CO, CO<sub>2</sub>, N<sub>2</sub>, Ar AND NMHC FOR THE SEMICONDUCTOR INDUSTRY

Incorporating the latest advances in gas sensing technology and signal processing methodology, the NanoChrome revolutionizes ultra-trace purity measurements for the semiconductor industry.

- In compliance with Low Voltage, EMC and applicable Directives
- New PED Sensor technology enables sub-ppb measurements of H<sub>2</sub>, CH<sub>4</sub>, CO, CO<sub>2</sub>, N<sub>2</sub>, Ar and NMHC
- Enables unique total Servomex solution for UHP gas analysis

GAS

MULTIPLE

MEASURES

ppb  
ULTRA TRACE  
ppt  
ULTRA TRACE

APPLICATION



### SENSING TECHNOLOGY

GAS CHROMATOGRAPHY



PLASMA



# SERVOPRO MonoExact

SAFE AREA



## DIGITAL SINGLE GAS ANALYZER WITH TCD MEASUREMENTS

The MonoExact gas analyzer brings Servomex's acclaimed TruRef Thermal Conductivity (TCD) technology to ASU operators in a compact, single component analyzer, offering class-leading measurements for Ar, He, N<sub>2</sub> and H<sub>2</sub>.

- In compliance with Low Voltage, EMC and applicable Directives
- TruRef offers ASU operators truly industry-leading measurements for drift accuracy, linearity and repeatability
- Cost-of-ownership optimized by longer calibration intervals and no reference gas requirements

GAS

MULTIPLE

MEASURES

%  
PERCENT

APPLICATION



### SENSING TECHNOLOGY

THERMAL CONDUCTIVITY



# GAS DETECTION OxyDetect

SERVOMEX



## NON-DEPLETING PARAMAGNETIC OXYGEN MONITOR DESIGNED FOR LIFE SAFETY APPLICATIONS

Life safety monitor designed for safe area or hazardous area environments, utilizing superior performance of non-depleting Hummingbird Paramagnetic O<sub>2</sub> sensing technology.

- IP66 (indoor use only)
- The most reliable O<sub>2</sub> detector on the market
- No more false readings or false alarms caused by depleting cell technologies
- SIL 2 approval

GAS

O<sub>2</sub>  
OXYGEN

MEASURES

%  
PERCENT

APPLICATION



### SENSING TECHNOLOGY

PARAMAGNETIC





## SERVOFLEX Micro i.s. 5100

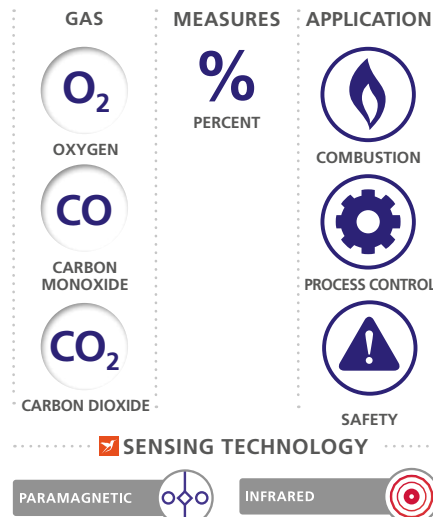
PORTABLES



### INTRINSICALLY SAFE ANALYZER MEASURES OXYGEN, CARBON MONOXIDE OR CARBON DIOXIDE

Designed for the measurement of toxic and flammable gas samples, the intrinsically safe Micro i.s. is a unique analyzer certified to Zone 0 and Zone 1 and suitable for measuring percent levels of O<sub>2</sub>, CO and CO<sub>2</sub>.

- Intrinsically Safe design to ATEX and IEC standards ensures safety operation in hazardous environments
- Ergonomic design ensures easy operation on the move
- Available in non-pump or pump versions with optional sample conditioning kit



## SERVOFLEX MiniMP 5200

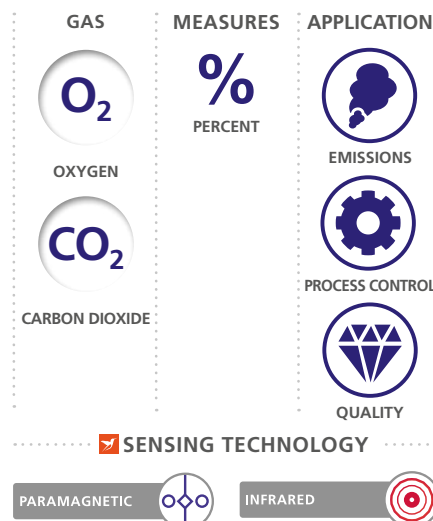
PORTABLES



### BENCHTOP ANALYZER OFFERING SINGLE OR DUAL MEASUREMENTS OF OXYGEN AND CARBON DIOXIDE

The only truly portable battery powered gas analyzer with MCERTS certification, the MiniMP is designed to offer single or dual measurement of O<sub>2</sub> and CO<sub>2</sub> by utilizing Servomex's advanced Paramagnetic and Infrared sensing technologies.

- EN15267-3 (MCERTS V3.3, Annex F) makes the MiniMP for source testers that require reference O<sub>2</sub> analysis for CEMS verification
- Li-ion battery system offers unique true portability
- Non-depleting sensor design ensures long service with minimal calibration



## SERVOFLEX MiniHD 5200

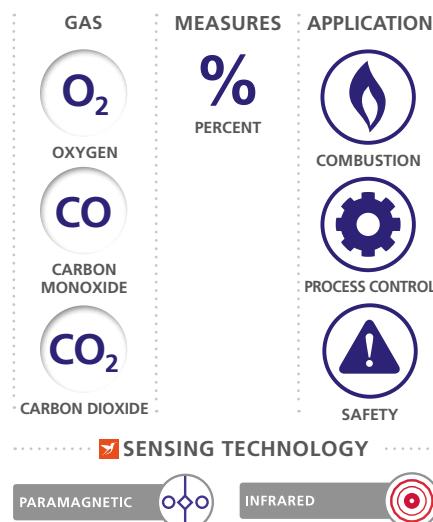
PORTABLES



### PORTABLE GAS ANALYZER FOR MEASUREMENT OF COMMON GAS MIXTURES

Designed for use in field locations or light industrial applications, the MiniHD portable gas analyzer is a rugged, heavy duty analyzer designed to accurately measure the levels of O<sub>2</sub>, CO and CO<sub>2</sub> within common gas mixtures. The MiniHD utilizes Servomex's non-depleting Paramagnetic and Infrared sensors to give dependable and accurate results.

- Robust IP65 construction meets the demanding needs of field location analysis
- Long life Li-ion rechargeable batteries and range of sampling options ensure ease of use
- Accurate measurement of O<sub>2</sub>, CO and CO<sub>2</sub> levels with no background interference







### BENCHTOP ANALYZER FOR QUALITY CONTROL/CHECKS IN MODIFIED ATMOSPHERES PACKAGING

A small sample volume portable benchtop analyzer designed specifically for the checking and quality control of gas mixtures in Modified Atmosphere Packaging (MAP) used in the food and pharmaceutical industries, the MiniFoodPack 5200 enables single or dual measurements for percent levels of O<sub>2</sub> and CO<sub>2</sub>.

- CE marked and in compliance with EEC, EMC and WEEE Directives. UL approved and CE marked 100-240V / 43-70Hz AC power supply
- Range of sampling accessories is available for taking measurement from rigid or flexible pack
- Rechargeable battery option enables complete portability for flexible operation

GAS



OXYGEN



CARBON DIOXIDE

MEASURES

%  
PERCENT

APPLICATION



QUALITY

#### SENSING TECHNOLOGY

PARAMAGNETIC



INFRARED



## DELTA F DF-500 Range

### HIGH PURITY



### LEADING ULTRA-TRACE PPT O<sub>2</sub> ANALYZER RANGE

Verified by independent experts as measuring O<sub>2</sub> to the lowest ppt levels available, the DF-500 analyzer range delivers the premium performance in ultra-trace oxygen measurement. Consisting of the DF-550E NanoTrace and DF-560E NanoTrace II, the NanoTrace series delivers exceptional O<sub>2</sub> measurements at trace and ultra-trace ppt levels.

- The industry standard for the reliable measurement of oxygen in semiconductor manufacture
- Fast response and quick upset recovery ensures ultimate performance
- Options include flexible configurations and hand carry portable option

GAS



OXYGEN

MEASURES

ppb  
ULTRA TRACE  
ppt  
ULTRA TRACE  
ppm  
TRACE

APPLICATION



QUALITY

#### SENSING TECHNOLOGY

COULOMETRIC



## DELTA F DF-700 Range

### HIGH PURITY



### TDL TRACE MOISTURE ANALYZER RANGE

A sophisticated process moisture analyzer range which offers users the comprehensive solution for trace and ultra-trace moisture measurement, the DF-700 series combines the latest Tunable Diode Laser Absorption Spectroscopy (TDL) technology, a robust measuring cell and a true baseline reference for highly accurate moisture measurement.

- Exceptional sub-ppb moisture level readings which exceed current UHP moisture measurement requirements
- Models include DF-730 (moisture in HCl); DF-740 (moisture in ammonia); DF-745 (high sensitivity 2ppb LDL); DF-745 SGMax (specialty gas trace moisture analyzer); DF-750 NanoTrace (base model); DF-760 dual oxygen and moisture measurement
- 2F TDL detection technology for robustness to particulates contamination

GAS



WATER

MEASURES

ppm  
TRACE  
ppb  
ULTRA TRACE  
ppt  
ULTRA TRACE

APPLICATION



QUALITY

#### SENSING TECHNOLOGY

LASER MOISTURE



# > WE'RE READY TO HELP

WHATEVER YOUR GAS ANALYSIS REQUIREMENTS, WHEREVER YOU ARE