

# SERVOPRO MultiExact 4100

A SOPHISTICATED, NEXT-GENERATION MULTI-GAS ANALYZER DESIGNED TO PROVIDE A HIGHLY ADAPTABLE ANALYSIS SOLUTION FOR INDUSTRIAL AND MEDICAL GAS MANUFACTURERS



## SERVOPRO MultiExact 4100



The SERVOPRO MultiExact 4100 is a high-performance multi-gas analyzer designed to provide up to four simultaneous gas stream measurements including: O<sub>2</sub> (trace, control, and purity), CO<sub>2</sub>, CO (% and trace), N<sub>2</sub>O, CH<sub>4</sub> (trace), Ar in O<sub>2</sub>, N<sub>2</sub> in Ar, O<sub>2</sub> or air, and He in Ar, O<sub>2</sub> or N<sub>2</sub>.

Specifically designed to address the needs of industrial and medical gas manufacturers, the MultiExact 4100 can be fitted with a wide range of sensing technologies – Paramagnetic, Zirconia, Gas Filter Correlation Infrared (GFx), single-beam Infrared (SBSW), Aluminum Oxide, and Thermal Conductivity (TCD).

These proven, digital sensors not only provide highly accurate measurements but also offer operational flexibility in a range of industries and applications. The non-depleting, high-stability sensing technologies help extend maintenance intervals while intelligent functionality such as independent auto-calibration helps to deliver operational efficiencies over a long product life.

Using the same reliable measurement technology as the SERVOPRO 4100 and MultiExact 5400, the new MultiExact 4100 is backward-compatible with existing installations, providing trusted gas analysis while offering the advanced digital communications that many modern systems require.

## FLEXIBLE

- Comprehensive solution for industrial and medical gas manufacture and for pharmacopeia applications
- Measures up to four gas streams simultaneously
- Integrated support for the AquaXact 1688 Aluminum Oxide moisture transmitter
- Digital communications for remote access: RS232/RS485 Modbus and PROFIBUS (Ethernet Modbus TCP/IP to follow)
- Up to 32 alarms and 32 relays with follow or freeze options
- Four analog outputs and four analog inputs

## EASY TO USE

- Intuitive-use icon-driven color touchscreen for easy device interaction and configuration
- USB serial port for data logging and software upgrades
- Analyzer configurations can be easily duplicated using USB thumb drive

## LOW COST OF OWNERSHIP

- Uses ultra-stable, non-depleting digital sensing technologies that help extend maintenance intervals
- Auto-calibration function helps to reduce operational costs

## UNRIVALLED PERFORMANCE

- Uses industry-leading, ultra-sensitive and reliable Paramagnetic, GFx Infrared, SBSW Infrared, Zirconia, Aluminum Oxide and TCD sensing technologies
- Manufactured by Servomex – more than 60 years' experience innovating and pioneering gas analysis and thousands of units used in the field every year

## BENCHMARK COMPLIANCE

- USP compliant method for assay of medical oxygen and medical air
- European Pharmacopoeia compliant for medical oxygen and medical air
- In compliance with Low Voltage, EMC and applicable EU Directives

Learn more about the SERVOPRO MultiExact 4100  
Visit [servomex.com/multiexact4100](http://servomex.com/multiexact4100)



# PRODUCT OVERVIEW: SERVOPRO MultiExact 4100

## HIGH RELIABILITY AND UNRIVALLED PERFORMANCE

With a strong combination of features and benefits, the MultiExact 4100 is a highly adaptable analysis solution that meets a range of needs. It uses a wide range of Servomex's proven, reliable and accurate sensing technologies to provide up to four simultaneous gas stream measurements, meeting the challenges faced by industrial and medical gas manufacturers. With flexible analysis solutions capable of meeting specific process monitoring needs, the MultiExact 4100 delivers precise, stable results at every point of the ASU process. The versatile MultiExact 4100 can be customized to meet your exact requirements, giving you the accuracy you need, without compromise.

## THE NEXT-GENERATION SOLUTION

The MultiExact 4100 shows how sophisticated modern gas analyzers can be, with built-in support for the new Servomex AquaXact 1688 moisture sensor, up to 32 relays/alarms and four analog inputs for integrating information from external sensors such as temperature, pressure or concentration information from another gas sensor. In addition, analog and digital communications include the traditional 0-10V DC, 4-20mA, RS232 and RS485 outputs, while also providing optional advanced digital protocols, including Serial Modbus and PROFIBUS, with Ethernet (Modbus TCP/IP) to follow. In addition to its considerable monitoring capabilities, the MultiExact 4100 also provides engineer-friendly interaction through a high-brightness color touchscreen display and an intuitive, icon-driven user interface. It combines all the reliability of Servomex's familiar technology range with the flexibility, ease of use and range of intelligent digital options that the modern IG market demands.

## SIMPLE MAINTENANCE AND REDUCED ONGOING COSTS

The efficient, next-generation design of the MultiExact 4100 keeps maintenance requirements at a minimum. Servomex's non-depleting, low-drift technologies are easy to set up and install, especially with the new touchscreen display and easy to use interface. With ongoing costs for sensor replacement eliminated, and recalibration only needed at extended intervals – plus independent auto calibration – the cost of ownership across the product lifetime is kept extremely low.

## ALTERNATIVE PRODUCTS

The Servomex product range features a number of options designed to meet your application needs.

### MonoExact DF310E



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

### AquaXact 1688



A rugged ultra-thin film Aluminum Oxide moisture sensor that enables fast and accurate dew point and ppm H<sub>2</sub>O measurements of moisture in a wide variety of gas phase process applications.

### Plasma



Designed for the continuous monitoring of N<sub>2</sub> in Ar, He or both, the Plasma provides a stable, sensitive and reliable measurement using Plasma Emissions Detection (PED), ideal for ASU plant operators.

## KEY APPLICATIONS

- Product purity on air separation plant
- Process control on air separation plant
- Bottling/filling plant applications
- Monitor trace CO<sub>2</sub> on scrubbed air inlet to air separation process
- Validation of medical O<sub>2</sub>, N<sub>2</sub>, air and He

SERVOMEX  
TECHNOLOGIES

UV FLUORESCENCE

ZIRCONIA

ALUMINUM OXIDE

GAS FILTER  
CORRELATION

CHEMILUMINESCENCE

CALORIMETRY

PARAMAGNETIC

THERMAL  
CONDUCTIVITY

# PRODUCT DATA: SERVOPRO MultiExact 4100

## MONITORING PERFORMANCE

Gas	O <sub>2</sub> purity	O <sub>2</sub> control	O <sub>2</sub> trace	Ar, N <sub>2</sub> , He	CO <sub>2</sub> (trace)	CO <sub>2</sub> (trace) <sup>†</sup>
Technology	Paramagnetic	Paramagnetic	Zirconia	Thermal Conductivity (TCD)	Infrared (Gfx)	Infrared (Gfx)
Range	0-100%	0-100%	0-210,000ppm	0-10% ,20%, 50%, 100%/80-100%/ 90-100% He: 0-2%, 5%, 30%	0-5/0-100ppm	0-50/0-500ppm
Accuracy (intrinsic error)	±0.01% O <sub>2</sub>	±0.1% O <sub>2</sub>	±0.1ppm**	±1% span	1% of rdg or <0.1ppm	1% of rdg or <0.5ppm
Repeatability	<0.01% O <sub>2</sub>	<0.1% O <sub>2</sub>	<0.1ppm**	<0.5% span	1% of rdg or <0.1ppm	1% of rdg or <0.5ppm
Zero drift/ week	±0.01% O <sub>2</sub>	±0.05% O <sub>2</sub>	± 0.25ppm	±1% span per month	0.2ppm	1ppm
T <sub>90</sub> in secs	<10@200ml/min	<10@200ml/min	<10@400ml/min <sup>‡</sup>	<15@150ml/min	<20@2000ml/min	<20@2000ml/min

## MONITORING PERFORMANCE CONT

Gas	N <sub>2</sub> O (trace) <sup>†</sup>	CO (trace)	CH <sub>4</sub> (trace)	CO <sub>2</sub> (%)	CO (%)
Technology	Infrared (Gfx)	Infrared (Gfx)	Infrared (Gfx)	SBSW IR	SBSW IR
Range	0-50/0-500ppm	0-50/0-500ppm, 0-10/0-50ppm <sup>†</sup>	0-50/0-500ppm	0.25/0.5/1/2.5/5/ 10/25/50 /100%	1/2.5/10 %
Accuracy (intrinsic error)	1% of rdg or <0.5ppm*	1% of rdg or <0.5ppm*	1% of rdg or <0.5ppm*	<1% FS	<1% FS
Repeatability	1% of rdg or <0.5ppm	1% of rdg or <0.5ppm	1% of rdg or <0.5ppm	<1% FS	<1% FS
Zero drift/ week	1ppm	1ppm	1ppm	<2% FS	<2% FS
T <sub>90</sub> in secs	<20@2000ml/min	<20@2000ml/min	<20@2000ml/min	<20@200ml/min	<20@200ml/min

\* Whichever is the greater

\*\* For the range 0-10ppm O<sub>2</sub>

† Background N<sub>2</sub> or O<sub>2</sub>, calibrate in chosen background gas

‡ For a change 2-10ppm O<sub>2</sub>



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## DEVICE SPECIFICATION

### Size:

- 132.5mm (5.2") high (265.5mm (10.5") high with expansion chassis)
- 481.6mm (19") wide
- 544.2mm (21.4") deep

### Weight:

- Main unit: approx 14kg (30.9lb)
- Expansion chassis: approx 13.7kg (30.2lb)  
(dependent on number and type of sensors used)

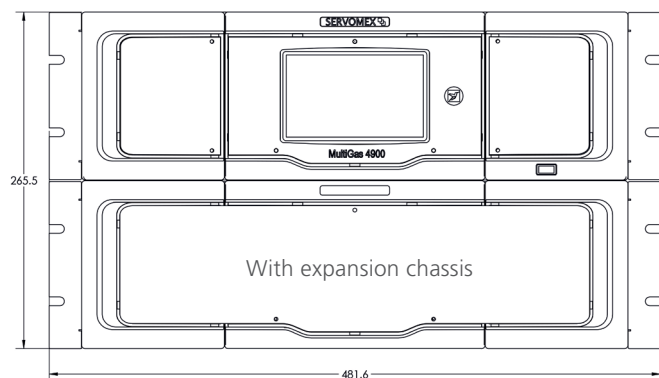
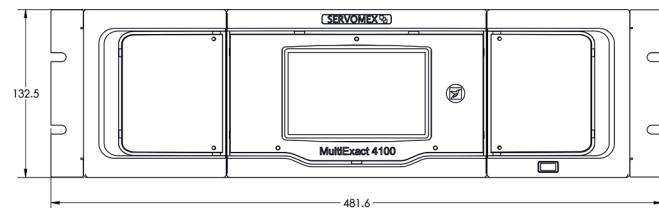
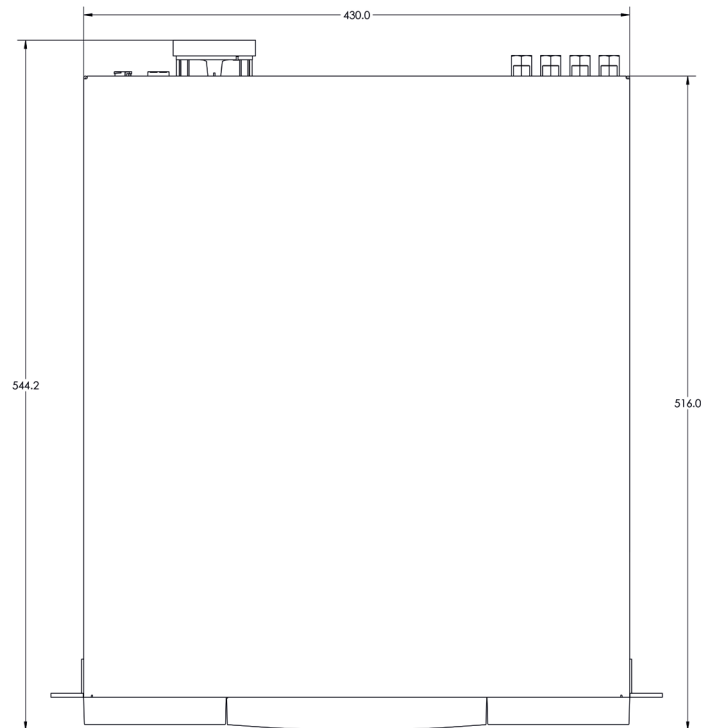
### Operating Temperature:

- 5°C – 40°C (41°F – 104°F)

### Certifications:

- EN 61010-1: Safety requirements for electrical equipment for measurement, control and laboratory use
- EN 61326-1: Electrical equipment for measurement, control and laboratory use
- EMC requirements
- Installation Category II rated in accordance with IEC664

## SCHEMATICS



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*These analyzers are not intended for any form of use on humans and are not medical devices as described in the Medical Devices Directive 93/42EEC.*

*Please note: This document was updated in July 2017. While every effort has been made to ensure accuracy, no responsibility can be accepted for errors or omissions. Data may change, as well as legislation, and you are strongly advised to obtain copies of the most recently issued regulations, standards and guidelines. This document is not intended to form the basis of a contract.*

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