



## SERVOPRO MultiExact

The SERVOPRO MultiExact is the next generation analyser family specifically designed to meet the needs of industrial gas producers and users, offering unparalleled operational performance with low maintenance burden for air separation processes.

### FEATURES

- Measures up to two gas streams simultaneously.
- Unparalleled operation performance from enhanced sensor technologies.
- Low cost of ownership.
- Comprehensive digital communications.

### APPLICATIONS

- Air separation.
- Process control.
- Product validation.
- Safety.

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### KEY FEATURES

#### Measures up to two gas streams simultaneously

One or two independent gas streams can be measured simultaneously, the information is displayed and available on analogue and/or digital outputs.

#### Unparalleled operational performance from enhanced sensor technologies

Servomex proven sensor technologies - paramagnetic, infrared gas filter correlation, and zirconia - have been further enhanced using digital technology, offering superior, reliable measurement.

#### Low cost of ownership

The high stability and reliability of Servomex sensor technologies and the intuitive and easy to configure LCD menu ensures reduced calibration frequency with a lower maintenance and training burden.

#### Comprehensive digital communications

The MultiExact offers a broad range of digital communications - Continuous ASCII output (RS232), Modbus (RS485), Ethernet (Modbus TCP), and PROFIBUS (RS485).

### ELECTRICAL SAFETY

Electrical safety to IEC 61010-1

Approved for use in North America.

The product is rated for "Overvoltage Category II".

The product is rated for "Pollution Degree 2".

### EC DIRECTIVE COMPLIANCE

The SERVOPRO MultiExact is in compliance with:

Low Voltage Directive

EMC Directive

And all other applicable Directives.

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### SPECIFICATION

Gas type	O <sub>2</sub> (purity)	O <sub>2</sub> (control)	O <sub>2</sub> (trace)	CO <sub>2</sub> (trace)	N <sub>2</sub> O (trace)
PERFORMANCE					
Technology:	Paramagnetic (Pm)	Paramagnetic (Pm)	Zirconia (Zr)	Infrared (Gfx)	Infrared (Gfx)
Operating range:	0-100% O <sub>2</sub>	0-100% O <sub>2</sub>	0-210,000ppm <sup>‡</sup> O <sub>2</sub>	0-10ppm CO <sub>2</sub>	0-20ppm N <sub>2</sub> O
Smallest recommended output range:	99.5-100% O <sub>2</sub> <sup>●</sup>	0-5% O <sub>2</sub>	0-5ppm O <sub>2</sub>	0-5ppm CO <sub>2</sub>	0-10ppm N <sub>2</sub> O
Intrinsic error (accuracy):	<0.01% O <sub>2</sub>	<0.1% O <sub>2</sub>	<0.1ppm O <sub>2</sub> <sup>++</sup>	<0.1ppm CO <sub>2</sub>	<0.2ppm
Repeatability:	<0.01% O <sub>2</sub>	<0.1% O <sub>2</sub>	<0.1ppm O <sub>2</sub> <sup>++</sup>	<0.1ppm CO <sub>2</sub>	<0.2ppm
Response time (T <sub>90</sub> ) <sup>▼</sup> at sample flow rate:	<10 seconds 200ml/min	<10 seconds 200ml/min	<10 seconds <sup>◆</sup> 400ml/min	<15 seconds 500ml/min	<15 seconds 500ml/min
Zero drift/week:	<0.01% O <sub>2</sub>	<0.05% O <sub>2</sub>	<1% of reading or 250ppb <sup>*</sup>	<0.4ppm CO <sub>2</sub>	<0.8ppm N <sub>2</sub> O
Span drift/week:	<0.02% O <sub>2</sub>	<0.1% O <sub>2</sub>	<1% of reading or 250ppb <sup>*</sup>		
Cross sensitivity <sup>▲</sup> (zero set on nitrogen):	No effects	No effects	The following have a typical effect of <1ppm O <sub>2</sub> : 15ppm H <sub>2</sub> 100ppm CH <sub>4</sub> or 80ppm CO	No effects	No effects
Flow range:	100-250ml/min	100-250ml/min	200-400ml/min	200-500ml/min	200-500ml/min

All measurements are ppm by volume.

- ‡ 21% - 100% indicative oxygen measurement
- suppressed zero
- \* whichever is greater
- ++ in range 0-10ppm
- ◆ for a change of 2-10ppm O<sub>2</sub>
- ▼ for flow driven sample systems or pressure driven sample systems at 8psig input
- ▲ Data quoted for air separation applications

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### SPECIFICATION

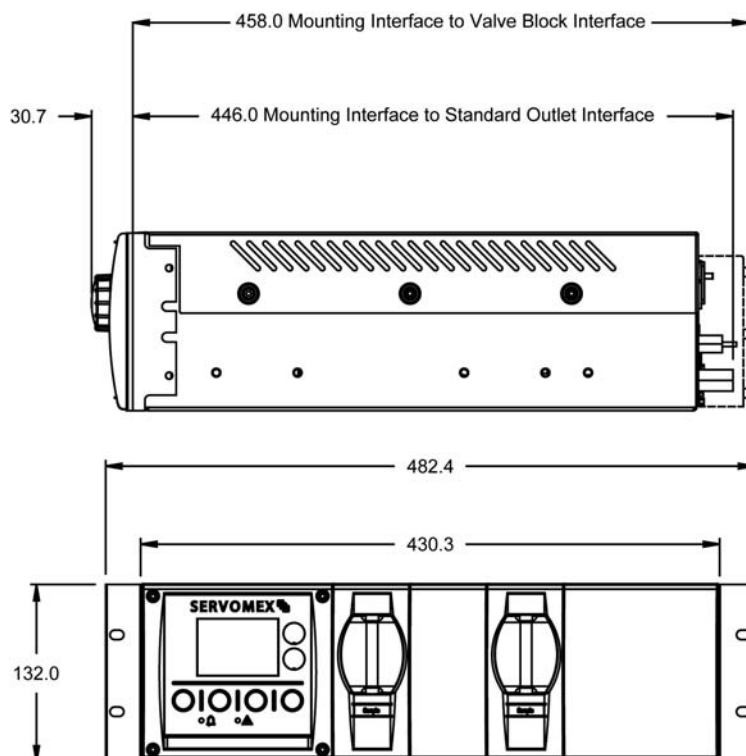
OUTPUTS/INPUTS	
Analogue output:	Isolated 4-20mA /0-20mA per channel
Analogue output range:	Freely selectable over measurement range
Serial output:	Continuous ASCII output on RS232
Fault alarm + Range change:	Volt-free single pole relays (30V at 1A)
OPTIONS	
Analogue output:	Isolated 0-10V per channel
Digital communications:	Modbus ASCII or Modbus RTU on RS485 PROFIBUS on RS485 Ethernet (Modbus TCP)
Alarm/status relay card:	4 volt-free single pole relays (30V at 1A) for high alarm, low alarm, service in progress, maintenance required. NAMUR compliant
Calibration relay card:	3 volt-free single pole relays (30V at 1A) for sample stream, low cal gas, high cal gas 3 volt-free switched inputs, closure to activate Autoval/autocal configures: initiate, stop, initiate "service in progress" Remote cal configures: initiate low cal, initiate high cal, initiate "service in progress"
SAMPLE GAS	
Temperature:	5°C to 45°C (41°F to 104°F)
Dewpoint:	5°C (9°F) below minimum ambient
Condition:	Oil free, non-corrosive, non-condensing, non-flammable
Particulates:	Filtered to 2µm
Vent:	Vent to atmosphere
Sample pressure:	35±21kPa (5±3psig)

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## SAMPLE WETTED MATERIALS

Analyser Fitted With	O <sub>2</sub> Purity	O <sub>2</sub> Control Sensor	O <sub>2</sub> Trace Sensor	Gas Filter Correlation Trace Sensors
Stainless steel 303	✓	✓	✓	
Stainless steel 316	✓	✓	✓	✓
Viton	✓	✓	✓	✓
Polypropylene	✓	✓	✓	
PVDF			✓	
Borosilicate glass	✓	✓		
Platinum	✓	✓		
Platinum iridium alloy	✓	✓		
Electroless nickel	✓	✓		
Stainless steel 310			✓	
Alumina			✓	
Yttria stabilised zirconia			✓	
Nickel iron			✓	
Sealing glass			✓	
Gold			✓	✓
Calcium fluoride				✓
Nickel				✓
<b>Pressure Driven Option</b>				
Polysulphone	✓	✓		
<b>Flowmeter Option</b>				
Borosilicate glass	✓	✓	✓	
Duralumin	✓		✓	
<b>Internal Filter Option</b>				
Polycarbonate	✓	✓	N/A	N/A
Glass fibre	✓	✓	N/A	N/A

## DIMENSIONS



All dimensions shown in millimetres

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### DESCRIPTION

Power lead:	There are 3 options for the Power lead	<input type="checkbox"/> UK <input type="checkbox"/> Europe <input type="checkbox"/> US
Module 1:	<p>O<sub>2</sub> Purity is a premium paramagnetic based measurement with additional pressure compensation and is placed in a heated enclosure to ensure maximum performance</p> <p>O<sub>2</sub> Control is a high quality paramagnetic based measurement</p> <p>O<sub>2</sub> Trace is a Zirconia ppm oxygen measurement</p> <p>CO<sub>2</sub> Trace &amp; N<sub>2</sub>O Trace are ppm level Infrared Gas Filter Correlation measurements</p>	<input type="checkbox"/> O <sub>2</sub> Purity <input type="checkbox"/> O <sub>2</sub> Control <input type="checkbox"/> O <sub>2</sub> Trace <input type="checkbox"/> CO <sub>2</sub> Trace <input type="checkbox"/> N <sub>2</sub> O Trace
Module 2:	If only one GFx measurement is required it must be selected in Module 1	<input type="checkbox"/> O <sub>2</sub> Purity <input type="checkbox"/> O <sub>2</sub> Control <input type="checkbox"/> O <sub>2</sub> Trace <input type="checkbox"/> CO <sub>2</sub> Trace <input type="checkbox"/> N <sub>2</sub> O Trace
Sample system:	<p>For a Flow Driven analyser the flow limit will depend on the measurement type</p> <p>The pressure must be limited to 35±21kPa (5±3psig) in a Pressure Driven analyser</p>	<input type="checkbox"/> Flow Driven <input type="checkbox"/> Pressure Driven
Fascia options:	<p>Up to 4 fascia mounted options can be chosen</p> <p>The Filter measure is available for the paramagnetic measurement</p> <p>The Sample Flowmeter measures up to 500ml/min</p> <p>The Bypass Flowmeters are for Pressure Driven circuits only. Total flow through = sample flow 1+ bypass flow 1</p> <p>The Sample Flowmeter measures up to 500ml/min</p> <p>The Bypass Flowmeters are for Pressure Driven circuits only. Total flow through = sample flow 2 + bypass flow 2</p>	<input type="checkbox"/> Not required <input type="checkbox"/> Filter Measurement 1 <input type="checkbox"/> Filter Measurement 2 <input type="checkbox"/> Sample Flowmeter Measurement 1 <input type="checkbox"/> Bypass Flowmeter Measurement 1 <input type="checkbox"/> Sample Flowmeter Measurement 2 <input type="checkbox"/> Bypass Flowmeter Measurement 2
Flow:	Flow Alarm: A solid state flow sensor is fitted directly to the outlet of the measurement transducer ensuring that the measurement gas is flowing through the transducer at all times for maximum reliability of the measurement. The flow sensor gives 2 stages of alarm: maintenance required and instrument fault	<input type="checkbox"/> Flow Alarm Measurement 1 <input type="checkbox"/> Flow Alarm Measurement 2

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Analogue outputs:	Each gas module is supplied with an advanced mA output with auto-ranging as standard	<input type="checkbox"/> Voltage Analogue Output Measurement 1
	There is an option for a voltage output in place of the mA output	<input type="checkbox"/> Voltage Analogue Output Measurement 2
Autovalidation/ Autocalibration:	An option card that allows the instrument to control calibration gases automatically to validate or calibrate the measurement. This option can also be used for remote calibration of the analyser	<input type="checkbox"/> Autoval/cal Measurement 1 <input type="checkbox"/> Autoval/cal Measurement 2
	For dual gas analysers, both gas modules must be fitted with autovalidation/autocalibration if this option is selected	
Alarms/status relays:	A NAMUR compliant card provides Alarms, Maintenance and Service in Progress	<input type="checkbox"/> Measurement 1
		<input type="checkbox"/> Measurement 2
Digital outputs:	Digital communications allows for the analyser to be monitored and configured remotely. It allows for a greater level of remote diagnostics to be carried out above that supplied by the standard relay contacts	<input type="checkbox"/> Modbus, RS485 <input type="checkbox"/> Ethernet, Modbus TCP <input type="checkbox"/> PROFIBUS DP, RS485
Mounting:	Available with adjustable feet for bench mounting	<input type="checkbox"/> Bench
	The SERVOPRO MultiExact is designed to fit in a standard 3U 19" rack	<input type="checkbox"/> Panel Mounting <input type="checkbox"/> Rack Mounting
Valve block:	The Valve block will switch between three gas streams, sample, low cal and high cal. It is supplied with an autovalidation/autocalibration board to allow both automatic and manual control of the valves. For dual gas analysers, both gas modules must be fitted with a valve block if this option is chosen	<input type="checkbox"/> Measurement 1
		<input type="checkbox"/> Measurement 2
BPV:	The Back Pressure Valve is a valve to assist in calibrating the pressure compensation for the O <sub>2</sub> purity measurement	<input type="checkbox"/> Measurement 1
		<input type="checkbox"/> Measurement 2
User manual:		<input type="checkbox"/> English
		<input type="checkbox"/> French
		<input type="checkbox"/> German

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## SERVICE & SUPPORT

For new installations and replacement of older Servomex and competitor products, we will work with you to develop a bespoke service and support package, ensuring full measurement availability and plant operation within your timescales and budget.

### SERVOSPARES

To ensure the integrity and optimum performance of your Servomex product, we recommend fitting only factory authorised spare parts. This is particularly important for all hazardous area certified products.

### SERVOSURE

Ensure your Servomex analyser is properly commissioned and delivers optimum performance with a maintenance contract, service programme and extended warranty.

### SERVOTECH

Make the most of your Servomex gas analyser by attending a training course at one of our training centres in Europe, USA or Asia or on your own site.

### SERVOHELP

Whether you have a simple question or complex process challenge, our local offices and global support network are here to help you.

## BUSINESS CENTRES

EUROPE (Europe and Africa)  
Tel: +31 (0)79 330 1581  
Fax: +31 (0)79 342 0819  
Toll Free : 00800 7378 6639

USA & CANADA  
Tel: +1 281 295 5800  
Fax: +1 281 295 5899  
Toll Free: 1 800 862 0200

LATIN AMERICA/MEXICO  
Tel: +55 11 5188 8166  
Fax: +55 11 5188 8169

ASIA PACIFIC  
Tel: +86 (0)21 6489 7570  
Fax: +86 (0)21 6442 6498

INDIA AND MIDDLE EAST  
Tel: +91 22 67100359/60  
Fax: +91 22 66778896

## TECHNICAL CENTRE

Servomex Group Limited  
Crowborough  
East Sussex, UK  
TN6 3FB  
Tel: +44 (0)1892 652181  
Fax: +44 (0)1892 662253

## SYSTEMS ENGINEERING CENTRES

Crowborough, UK Tel: +44 (0)1892 652181  
Houston, USA Tel: +1 281 295 5800  
Shanghai, China Tel: +86 (0)21 6489 7570  
Mumbai, India Tel: +91 22 67100359/60

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