

PRODUCT OVERVIEW

SERVOPRO DF-550E NanoTrace

ULTRA HIGH PURITY



GAS	MEASURES	APPLICATION
OXYGEN	PPM TRACE PPB ULTRA TRACE PPT	QUALITY

SENSING TECHNOLOGY

COULOMETRIC



KEY APPLICATIONS

- Quality control checks for electronics grade gases
- Leak detection for electronics grade gas lines and VMB

ULTRA TRACE OXYGEN ANALYZER OPTIMIZED FOR QUALITY MEASUREMENTS IN HIGH PURITY ELECTRONIC GASES

UNRIVALLED PERFORMANCE

- Uses industry-leading, high stability coulometric sensor, with ultra-low drift
- Highly sensitive 200ppt Lower Detection Level (LDL)
- Fast speed of response in fluctuating O₂ concentrations and flow conditions
- Quick upset recovery dry-down avoids "running blind" when process problems occur

FLEXIBLE

- Suitable for use H₂, He, CH₄, CO, N₂, Ar and a host of fluorocarbons and slightly acidic HP gases‡
- Optional zero calibration system allows for mobile field use
- Flexible configuration options: initiation via front panel/digital interconnect
- Battery backup optional*
- Use in 18 different sample gases. Standard with our gas scale factor feature‡

EASY TO USE

- Bench top, panel mount or rack mount options
- Simplified ongoing maintenance requirements
- Optional calibration system for compact integration onto the rear of the panel

LOW COST OF OWNERSHIP

- Long lasting high capacity purifier on optional zero calibration system
- Non-depleting coulometric sensor with five-year warranty
- Requires only an annual SPAN calibration and RSA fluid quarterly
- Expensive and disruptive sensor replacements not required

BENCHMARK COMPLIANCE

- IEC 61010-1
- Overvoltage Category II, Pollution Degree 2
- EU EMC Directive
- EU Low Voltage Directive

* Not for use with flammable samples

‡ Analyzer for use with flammable samples shall be configured with stainless steel inlet and outlet plumbing only

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HIGH STABILITY COULOMETRIC TRACE MEASUREMENTS

When you work in quality control of electronic gases, you need an ultra-trace O₂ contaminant detector and/or, a gas line leak detection analyzer. The DF-550E can deliver both with high performance, stable measurements in a light and flexible configuration. You need analysis that is both stable, reliable and ultra-sensitive; it needs to deliver consistent results - untroubled by changing sample and flow rate conditions - and be able to overcome upset events quickly and effectively. Flexibility is key and the ability to measure O₂ in multiple background gases is essential to cover a wide application environment. Whatever your application needs, you'll want an analyzer that can reduce your ongoing costs and provide operational efficiencies. We don't believe you should have to compromise.

A NO COMPROMISE SOLUTION

The DF-550E is designed to deliver premium performance ultra-trace oxygen measurement in a range of background gases. Compact, reliable and highly accurate, the DF-550E series uses unique, non-depleting E-sensor technology to make exceptional low trace and ultra-trace PPT O₂ measurements with minimal sensor drift, no false negative readings or frequent and costly calibration requirements. The result is an analyzer that has become the de facto industry standard for the reliable measurement of oxygen in electronic gas manufacturing. While a number of hand carry choices and an optional manual calibration facility - rear-mounted to the device – enable flexible portability.

SIMPLE MAINTENANCE AND REDUCED ONGOING COSTS

In addition to its durable design and high reliability monitoring performance, the DF-550E provides attractive affordability. Initial set-up costs are reduced through its long-life pre-calibrated sensor technology that also comes with a 5-year warranty. The DF-550E features low ongoing device care costs through its requirement for only annual SPAN calibrations and quarterly RSA addition. These combined features make this device a flexible, reliable and affordable measurement solution you can depend on.

USEFUL LINKS



P8TDSD550 Rev.1 Date: 04/21

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.

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TECHNICAL DATA SHEET

SERVOPRO DF-550E NanoTrace



SPECIFICATIONS

GAS MEASURED	H ₂ , He, CH ₄ , CO, N ₂ , Ar and a host of fluorocarbons and slightly acidic HP gases‡
TECHNOLOGY	Coulometric non-depleting electrochemical sensor
PERFORMANCE	
Measurement range	0-10ppm
Intrinsic error (accuracy) FS	±3% of reading / 3% of measurement range or ±0.1ppb
Response time (T ₉₀)	<15 seconds at 0.7 l/min
Zero drift/month	Negligible
Lower detection limit (LDL)	200ppt
Resolution	100ppt
Upset recovery time	<5 minutes to return to within 10ppb of previous stable reading
SIGNAL OUTPUTS/INPUTS	
Analog outputs	4 analog options available; Non-isolated 4-20mA, 0-1, 0-2, 0-5 or 0-10V dc. Analog output can be configured to freeze during calibration
Digital outputs (optional)	Two-way RS-232 or RS-485
Output range	Any range between 0-20ppb and 0-10ppm
Alarms	4 measurement levels, electrolyte condition and temperature, 1 audible/visual flow alarm#
Sensor protection	Auto shut down to prevent damage if 100ppm O ₂ concentration persists for longer than 15 mins
Dual scale range	Two user selectable analog output ranges for rescaling the output once the primary range is exceeded
Gas scale factor	Background gas compensation for Ar, H ₂ , He, CO, NH ₃ , N ₂ O, SF ₆ , CHF ₃ , CF ₄ , C ₂ F ₆ , CH ₄ , C ₂ H ₄ , C ₂ H ₆ , C ₃ H ₈ , C ₄ H ₁₀ and C ₆ H ₁₄
SAMPLE CONDITIONS	
Gas	Sample must be oil free, non-corrosive and non-condensing
Temperature	0°C to +50°C (+32°F to +122°F)
Particulate size	Filtered to 2µm
Maximum dew point	+5°C/+9°F below minimum ambient
Zero gas	If required use 6 9's pure N ₂ or purchase the optional zero calibration panel
Span gas	O ₂ concentration should be between 40-80% of full scale
Sample pressure	15 – 25psig (2.03 – 2.72 BarA)
Vent	Vent to atmosphere
Flow rates	0.24 to 0.7 l/min
OPERATING ENVIRONMENT	
Temperature	Operating: 0°C to +45°C/+32°F to +113°F
Relative humidity	0 to 95% RH non-condensing
Warm up time	60 min with new electrolyte, after that only the residence time for the sample to reach the sensor
Max altitude	2,000m above sea level

‡ Analyzer for use with flammable samples shall be configured with stainless steel inlet and outlet plumbing only

Purchasable option

The performance specification has been written and verified in accordance with the international standard IEC 61207-1:1994 "Expression of performance of gas analyzers"



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PHYSICAL	
Size	309mm (12.1") Wide x 226mm (8.8") High x 253mm (9.9") Deep
Weight	8.2kg (18lbs)
Mounting	Benchtop, panel mount or rack mount options
Storage temperature	0°C to +50°C (+32°F to +122°F)
Sensor storage conditions	We recommend that the analyzer be operated as intended, within 6 months of delivery
UTILITIES	
Supply voltage	110V ac or 220V ac 50/60 Hz

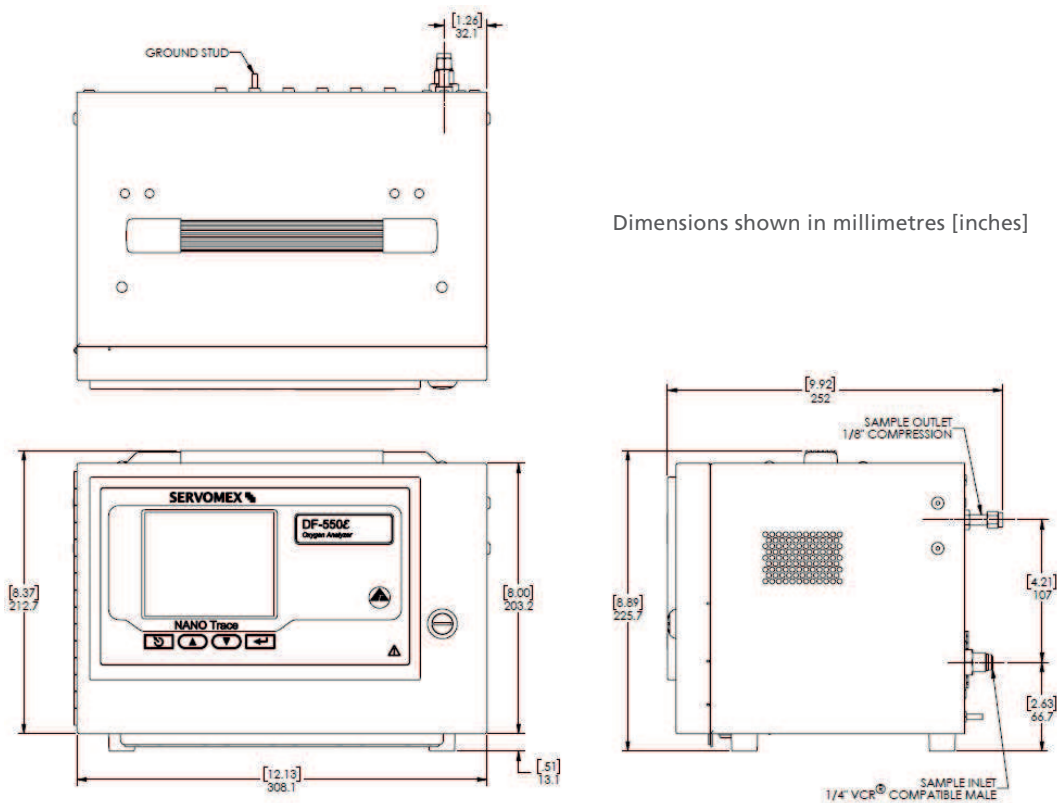
SAMPLE WETTED MATERIALS

ANALYZER FITTED WITH	Stainless steel, G10 epoxy and polypropylene
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COMPLIANCE

EC DIRECTIVES	This product complies with the EU EMC Directive, the EU Low Voltage Directive, Overvoltage Category II, Pollution Degree 2 and all other applicable directives.
ELECTRICAL SAFETY	Electrical safety to IEC 61010-1

DIMENSIONAL DRAWINGS



OPTIONS

CONFIGURATION OPTIONS		
Sensor	Basic sensor	<input type="checkbox"/>
	Stab-El sensor	<input type="checkbox"/>
Power input	110 VAC input power	<input type="checkbox"/>
	220 VAC input power	<input type="checkbox"/>
Battery back up	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
Calibration system	Not required	<input type="checkbox"/>
	Automated calibration system	<input type="checkbox"/>
	Manual calibration system	<input type="checkbox"/>
Auto control of user-cal	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
High capacity purifier	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
Case purge	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
Mounting/cabinet	Panel mount	<input type="checkbox"/>
	Rack mount	<input type="checkbox"/>
	Bench top	<input type="checkbox"/>
Key lock	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
Communication	Not required	<input type="checkbox"/>
	RS232 communication	<input type="checkbox"/>
	RS485 communication	<input type="checkbox"/>
Flow alarm	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
Relay contacts	Not required	<input type="checkbox"/>
	One relay contact	<input type="checkbox"/>
	Two relay contacts	<input type="checkbox"/>
	Three relay contacts	<input type="checkbox"/>
	Four relay contacts	<input type="checkbox"/>
Stainless steel outlet	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
Downstream isolation valve	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
UHP flow control valve	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
High purity pressure regulator	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
High purity regulator mounting	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
Isolated voltage & current O/P	Not required	<input type="checkbox"/>
	Required	<input type="checkbox"/>
Power cord	Not required	<input type="checkbox"/>
	USA	<input type="checkbox"/>
	Europe	<input type="checkbox"/>
	UK	<input type="checkbox"/>

Please tick the box for required options



OPTIONS

CONFIGURATION OPTIONS	
Stainless steel tags	Not required <input type="checkbox"/>
	Required <input type="checkbox"/>
	Tag text - 01
	Tag text - 02
Tag text - 03	
Certificate of calibration	Not required <input type="checkbox"/>
	Required <input type="checkbox"/>
Electrolyte type	Gold <input type="checkbox"/>
Electrolyte shipment method	None required, has own stock <input type="checkbox"/>
	From factory (add line item) <input type="checkbox"/>
	Other Smx plnt (add line item) <input type="checkbox"/>

Please tick the box for required options



> WE'RE READY TO HELP

WHATEVER YOUR GAS ANALYSIS REQUIREMENTS, WHEREVER YOU ARE

PBTDSDF50 Rev. 1 Date: 04/21

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