



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

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, N₂, Ar and other inert gases[‡]
- Compact size and weight allows for mobile field use
- Flexible configuration options: initiation via front panel or digital communications
- Use in 18 different sample gases, standard with our gas scale factor feature
- Bench top, panel mount or rack mount options

[‡] Consult Servomex for other gases

Easy to use

- Large color display, keypad, and intuitive software features
- Simple maintenance requirements
- Optional calibration system for compact integration onto the rear of the analyzer

Low cost of ownership

- Long lasting coulometric sensor with five-year warranty
- Requires only an annual SPAN calibration and quarterly RSA fluid replenishment
- Hydrogen utility gas not required
- Long lasting high capacity purifier on optional calibration systems

Benchmark compliance

- RoHS 3 and REACH
- IEC 61010-1
- Overvoltage Category II, Pollution Degree 2
- EU EMC Directive
- EU Low Voltage Directive

For more information visit servomex.com/contact

SERVOPRO

NanoTrace DF-550E

Product overview

Ultra High Purity

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 calibration option - 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.

These analyzers are not intended for any form of use on humans and are not medical devices as described in the Medical Devices legislation or regulation.

Please note: Whilst every effort has been made to ensure accuracy, no responsibility can be accepted for errors and 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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Useful links:



servomex.com/service



servomex.com/systems



servomex.com/expert-guidance





Specifications

Background gases	H ₂ , He, N ₂ , Ar and other inert gases‡
Technology	Coulometric non-depleting electrochemical sensor
Performance	
Measurement range	0-20ppm
Intrinsic error (accuracy)	±3% of reading or ±0.5ppb, whichever is greater
Response time (T ₉₀)	<30 seconds typical, <45 seconds max
Zero drift/month	Negligible
Lower detection limit (LDL)	0.2 ppb (200 ppt)
Display resolution	0.1 ppb (100 ppt)
Upset recovery time	<15 minutes to return to within 15 ppb of previous stable reading
Signal outputs/inputs	
Analog outputs	2 analog output options standard: isolated 4-20mA and 0-10V DC. Analog output can be configured to freeze during calibration
Digital outputs	2-way RS-232 or RS-485
Output range	Any range between 0-20 ppm to 0-2 ppb
Alarms	4 O ₂ concentration (user-configurable), electrolyte condition and temperature; flow (optional)
Sensor protection	Auto shut down to prevent damage if 100ppm O ₂ concentration persists
Multiple scale range	2 user selectable analog output ranges
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 ₆ , C ₄ H ₁₀ , C ₆ H ₁₄ , and others
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
Sample pressure	15 – 25psig (2.03 – 2.72 Bar)
Vent	Vent to atmosphere
Flow rates	0.25 to 0.7 lpm, nominal 0.5 lpm
Operating environment	
Temperature	Operating: 0°C to +45°C/+32°F to +113°F
Relative humidity	0 to 95% RH non-condensing
Max altitude	2,000m above sea level

‡ Consult Servomex for other gases

Physical	
Size	308mm (12.1") Wide x 235mm (9.3") High x 255mm (10") Deep
Weight	10kg (22lbs)
Mounting	Benchtop, panel mount or rack mount options
Storage temperature	0°C to +45°C (+32°F to +113°F)
Sensor storage conditions	We recommend that the analyzer be operated as intended, within 6 months of delivery
Utilities	
Supply voltage	100-240 VAC, 50/60 Hz

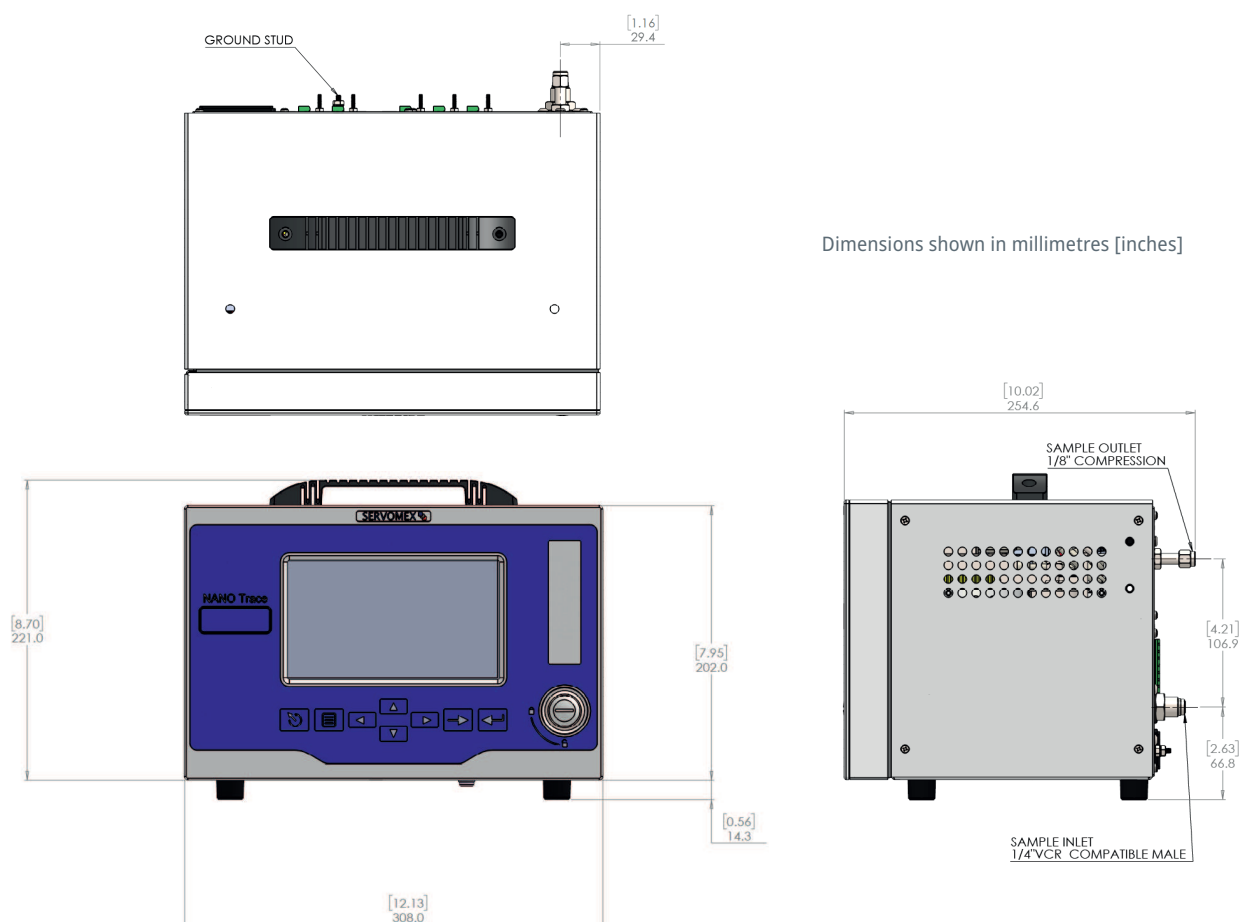
Sample wetted materials

Analyzer fitted with	Stainless steel, G10, Epoxy resin, Acrylic, Buna-N, and PVC
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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 CE directives.
Electrical safety	Electrical safety to IEC 61010-1

Dimensional drawings



Options

Configuration options		
Sensor	Stab-El sensor	☒
Power input	110 - 220 VAC universal input power	☒
Calibration system	Not required	☐
	Automated calibration system	☐
	Manual calibration system	☐
Auto control of user-cal	Standard	☒
Purifier	Standard capacity	☐
	High capacity	☐
Case purge	Not required	☐
	Required	☐
Mounting/cabinet	Panel mount	☐
	Rack mount	☐
	Bench top	☐
Key lock	Not required	☐
	Required	☐
Communication	RS232 communication	☐
	RS485 communication	☐
Flow alarm	Not required	☐
	Required	☐
Relay contacts	Four relay contacts	☒
Stainless steel outlet	Standard	☒
Downstream isolation valve	Not required	☐
	Required	☐
UHP flow control valve	Not required	☐
	Required	☐
High purity pressure regulator	Not required	☐
	Required	☐
Power cord	Not required	☐
	USA	☐
	Europe	☐
	UK	☐
Stainless steel tags	Not required	☐
	Required	☐
	Tag text - 01	
	Tag text - 02	
	Tag text - 03	
Certificate of calibration	Standard	☒
Electrolyte type	Gold	☒
Electrolyte shipment method	None required, has own stock	☐
	From factory (add line item)	☐
	Other Servomex plant (add line item)	☐

Please tick the box for required options

We're ready to help

Whatever your gas
analysis requirements,
wherever you are.

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Analysis that **empowers**

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