



| 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:



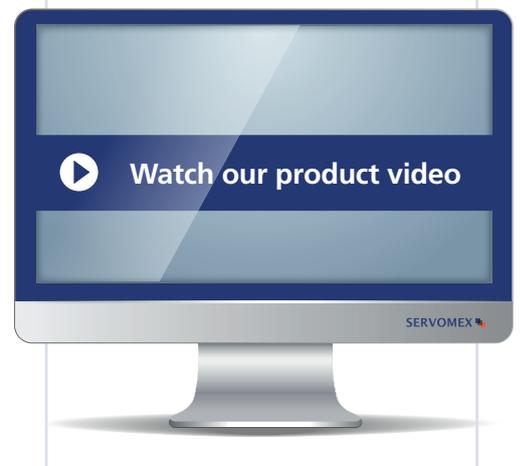
servomex.com/service



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 | Benchttop, 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 |

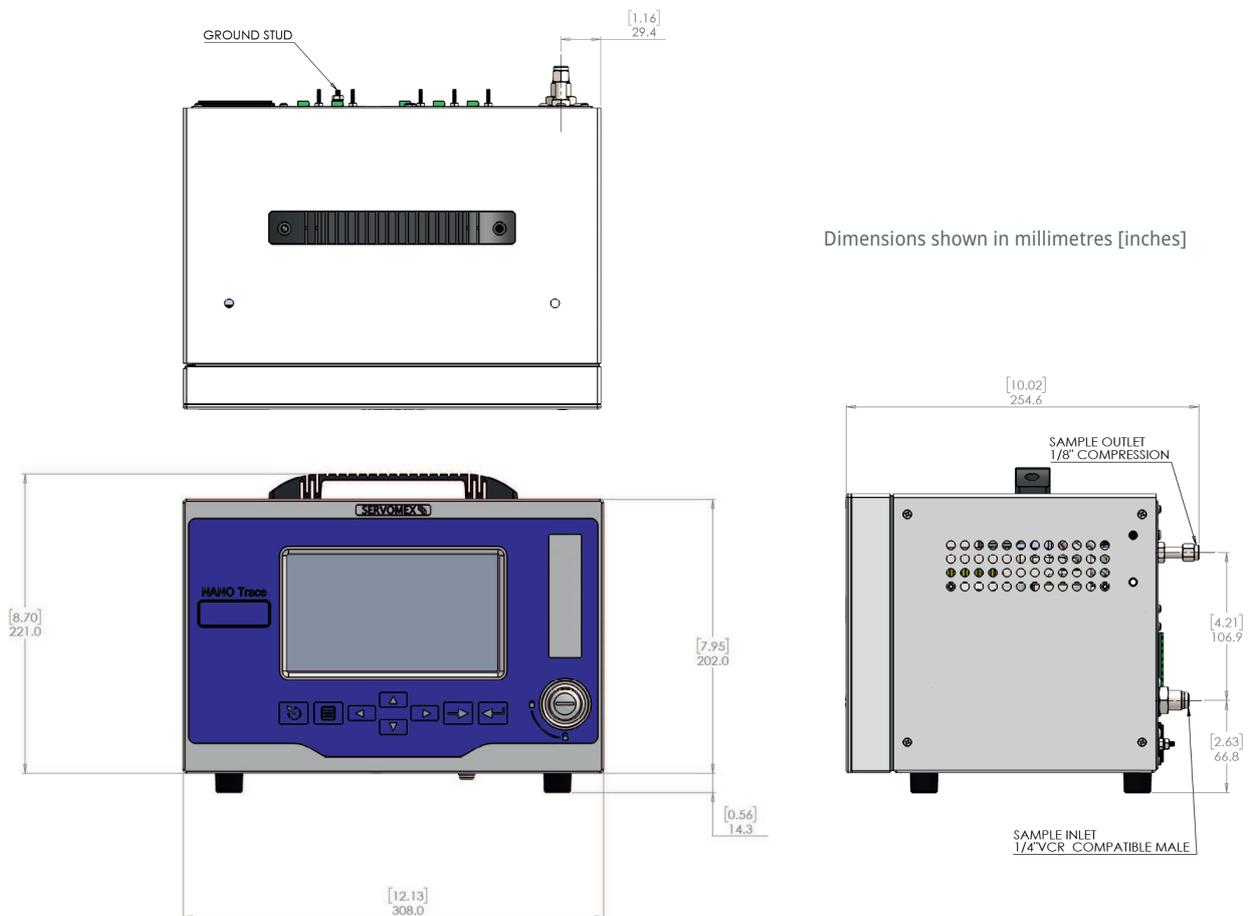
Sample wetted materials

| | |
|----------------------|---|
| Analyzer fitted with | Stainless steel, G10, Epoxy resin, Acrylic, Buna-N, and PVC |
|----------------------|---|

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 <input checked="" type="checkbox"/> |
| Power input | 110 - 220 VAC universal input power <input checked="" 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 | Standard <input checked="" type="checkbox"/> |
| Purifier | Standard capacity <input type="checkbox"/> High capacity <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 | RS232 communication <input type="checkbox"/> RS485 communication <input type="checkbox"/> |
| Flow alarm | Not required <input type="checkbox"/> Required <input type="checkbox"/> |
| Relay contacts | Four relay contacts <input checked="" type="checkbox"/> |
| Stainless steel outlet | Standard <input checked="" 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"/> |
| Power cord | Not required <input type="checkbox"/> USA <input type="checkbox"/> Europe <input type="checkbox"/> UK <input type="checkbox"/> |
| Stainless steel tags | Not required <input type="checkbox"/> Required <input type="checkbox"/> Tag text - 01 Tag text - 02 Tag text - 03 |
| Certificate of calibration | Standard <input checked="" type="checkbox"/> |
| Electrolyte type | Gold <input checked="" type="checkbox"/> |
| Electrolyte shipment method | None required, has own stock <input type="checkbox"/> From factory (add line item) <input type="checkbox"/> Other Servomex plant (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.

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Representantes / Distribuidores Exclusivos

 Argentina

Tel: (+54 11) 5352 2500

Email: info@dastecsrl.com.ar

Web: www.dastecsrl.com.ar

 Uruguay www.dastecsrl.com.uy

 Paraguay www.dastecsrl.com.py

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Analysis that **empowers**

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