

# SERVOTOUGH DF-340E

**HIGH PERFORMANCE COULOMETRIC TRACE AND PERCENT OXYGEN MEASUREMENTS IN PURE AND MULTI-GAS BACKGROUNDS, DESIGNED FOR EXTERNAL LOCATION USE**



## SERVOTOUGH DF-340E

The DF-340E uses highly stable Coulometric sensing designed to provide measurements of trace or percent level O<sub>2</sub> in pure gas streams and multi-gas backgrounds. Designed for heated or external locations, and certified to CSA Class I, Div II and the latest ATEX specifications, the DF-340E remains stable in changing sample and flow rate conditions, making it ideal for upset prone conditions. Suitable for outdoor installation, the DF-340 comes with NEMA 4-rated sensor enclosure options. This makes the DF-340E ideal for applications including pressure swing absorber N<sub>2</sub> skids, reactor process control, blanketing and inerting or refining/ petrochemical process monitoring.

This device is also optimized to deliver a reduced cost of ownership over product life, thanks to its factory calibrated sensing technology. This simplifies set-up and reduces ongoing maintenance, with only an annual SPAN calibration required.

### FLEXIBLE

- Coulometric sensing is ideal for upset prone applications and compensates for sample and flow rate fluctuations
- Operating range: 0-0.5ppm up to 0-25%
- NEMA 4-rated sensor enclosure available

### EASY TO USE

- Multiple background gas stream monitoring
- Microprocessor driven for easy configuration and maintenance
- Simplified ongoing maintenance requirements


### LOW COST OF OWNERSHIP

- Long-life Coulometric sensor with five year warranty
- Only requires an annual SPAN calibration reducing device care costs

### UNRIVALLED PERFORMANCE

- Uses industry-leading, high stability Coulometric trace and percent O<sub>2</sub> sensing with ultra-low drift potential
- Fast speed of response in the presence of changeable sample concentrations or flow rates
- Manufactured by Servomex - over 60 years' experience innovating and pioneering gas analysis and thousands of units used in the field every year
- 3ppb LDL when operating on 0-1ppm or lower range

### BENCHMARK COMPLIANCE

- ATEX certified:  II 3G Ex nA nC IIC T4 Gc
- IECEx certified: Ex nA nC IIC T4 Gc
- CSA certified for Class 1, Division 2, Groups A,B,C and D
- IEC 61010-1
- Overvoltage Category II, Pollution Degree 2
- EU EMC Directive
- EU Low Voltage Directive

Learn more about the SERVOTOUGH DF-340E  
VISIT [SERVOMEX.COM](http://SERVOMEX.COM)



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# PRODUCT OVERVIEW: DF-340E

## HIGH STABILITY COULOMETRIC TRACE AND PERCENT MEASUREMENTS

When you need an analyzer suited to external applications like pressure swing absorber N<sub>2</sub> skids, reactor process control, blanketing/inerting or oil refining and petrochemical process monitoring, high performing, ultra-stable percent and trace O<sub>2</sub> measurements are a pre-requisite. A sensing technology that can deliver a fast speed of response and recovery in upset conditions and changing sample and flow rates is essential in helping you achieve maximized uptime. No matter what your application needs, you'll also want an analyzer that can reduce your ongoing costs and provide operational efficiencies, and we don't believe you should have to compromise.

## A NO COMPROMISE SOLUTION

The DF-340E utilizes Servomex's leading edge Coulometric oxygen sensor. This delivers highly stable percent or trace O<sub>2</sub> measurements in upset prone applications and total reliability when sample and flow rates fluctuate. Offering Class I, Div II and ATEX certifications, as well as the option of a NEMA 4 rated sensor enclosure, the DF-340E is suited to diverse applications.

## SIMPLE MAINTENANCE AND REDUCED ONGOING COSTS

In addition to its flexible use and high performance monitoring capabilities, the DF-340E also offers a considerable cost saving over product life through its pre-calibrated sensor technology, allowing efficient set-up and commissioning. The use of a long-life sensor with a 5 year warranty that only requires subsequent annual SPAN calibrations provides considerable maintenance efficiencies over product life. This makes the DF-340E a highly attractive solution that delivers ultra-stable performance, flexible use and a reduced cost of ownership.

## ALTERNATIVE PRODUCTS

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

### DF-310E



Optimized to meet the needs of Industrial Gas producers, the DF-310E offers trace and percent O<sub>2</sub> measurements in pure gas streams and multi-gas backgrounds. Ideal for applications including N<sub>2</sub>, Ar and H<sub>2</sub> production, truck loading and gas bottling.

### DF-150E



When you need an adaptable Coulometric sensing O<sub>2</sub> analyzer designed for diverse usage including heat treatment applications, choose the DF-150E. This device can also deliver percent level monitoring for process control and laboratory applications.

### DF-550E NanoTrace



When an ultra-trace contaminant O<sub>2</sub> measurement solution is required, we recommend DF-550E NanoTrace. This device is ideally suited to ultra-high purity electronic grade gas quality control monitoring.

## KEY APPLICATIONS

- Pressure swing absorber N<sub>2</sub> skids
- Reactor process control
- Blanketing and inerting
- Oil refinery monitoring
- Petrochemical process monitoring



# PRODUCT DATA: DF-340E

OPTIONS	DESCRIPTION	SPECIFICATION
Output	Two output options available	Non-isolated 0-5V DC / non-isolated 0-10V DC
Analog outputs	Various options	Isolated 4-20mA DC output or isolated 4-20mA, which reads 2mA when the sensor is off
Output range	Output parameters	Any range between 0-0.5ppm to 0-25% (and any range in-between)
Alarms	Low flow, concentration and electrolyte	Up to 4 audible/visual concentration alarms, 1 audible/visual flow alarm and an electrolyte condition alarm
Sample pressure regulator	316LSS pressure regulator	3,000psig inlet and 28 in Hg to 30psig output (standard or high purity version – supplied mounted or loose)
High purity inlet	VCR welded sample inlet	Standard on 0-50ppm high resolution model
Flow control valves	Integral upstream flow control options	Not available on 0-50ppm range model or with VCR welded sample inlet
Dual scale range	2 range options	4-20mA output with ID range
Stab-El sensor	Designed for samples containing trace acid or ionic contaminants	Enables operation with trace levels of acid gases or ionic contamination. Samples containing acid components must use Stab-El option
Mounting	One option	Wall mount
Relay contacts	Up to 4 independently assigned contacts	Rated at 0.3 Amps at 30V DC

## ACCESSORIES

**ACCESSORIES AVAILABLE FOR SPECIFIC APPLICATIONS – CONTACT YOUR LOCAL SERVOMEX BUSINESS CENTER**

MONITORING PERFORMANCE		
Gas	O <sub>2</sub> (purity)	O <sub>2</sub> (purity)
Technology	Coulometric	Coulometric
Model	Standard	High resolution
Range	0-0.5ppm / 0-25%	0-0.5ppm / 0-25%
Accuracy (intrinsic error) FSD	±3% of reading / 0.5% of measurement range	±3% of reading / 0.02% of measurement range
Zero drift/month	Negligible	Negligible
T <sub>90</sub> in secs.	<10 at 0.75l/min	<10 at 0.75l/min

# PRODUCT DATA: DF-340E

## SAMPLE FOR MEASUREMENTS

Sample for measurement	Sample must be oil free, non-corrosive, non-condensing
Sample pressure	0.2 – 1psig
Dew Point	5°C/9°F below minimum ambient
Particulates	Filtered to 2µm

## DEVICE SPECIFICATION

### Size:

- 355mm (13.9") Wide x 304 (11.9") High x 301mm (11.8") Deep

### Weight:

- <13.6kg (30lbs)

### Operating Temperature:

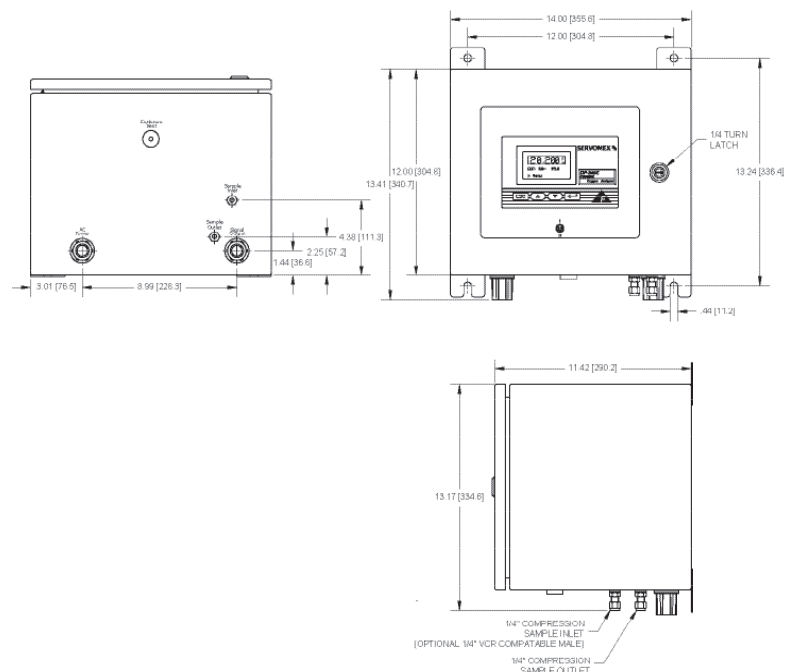
- 0°C - 50°C/32°F - 122°F

### Compliance:

- ATEX certified:  
 II 3G Ex nA nC IIC T4 Gc
- IECEx certified: Ex nA nC IIC T4 Gc
- CSA certified for Class 1, Division 2, Groups A,B,C and D
- IEC 61010-1
- Overvoltage Category II, Pollution Degree 2
- EU EMC Directive
- EU Low Voltage Directive

*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.*

## DEVICE SCHEMATIC



**Please note:** This document was updated in August 2014. 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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