



## DF-150E

The DF-150E is a Coulometric sensor based analogue oxygen analyser designed to measure trace oxygen in pure gases for process and quality control in heat treatment applications, glove boxes, and industrial gas plants. The DF-150E can also be configured to measure percent level for other process control and laboratory applications.

### FEATURES

- Non-depleting sensor with 5 year sensor warranty
- Factory calibrated
- Minimum maintenance
- Fast response time and recovery from upset condition
- Multiple options to suit a variety of application needs

### APPLICATIONS

- Surface mount and reflow pcb furnaces
- Annealing furnaces
- Glove boxes
- Nitrogen production
- Argon production
- Gas bottling

# DF-150E

## KEY FEATURES

### Low Cost of Ownership

Sensor is highly stable and requires annual SPAN calibration only. No programmed cell replacement required. Sensor warranty of 5 years as standard.

### Broad Operating Range

Can be configured to operate as a single range or 3 range analyser to meet the specific application need.

## ELECTRICAL SAFETY

Electrical safety to IEC 61010-1: Ed 2.

The product is rated for "Installation Category II" in accordance with IEC 60664-1.

The product is rated for "Pollution Degree 2" in accordance with IEC 60664-1.

## EC DIRECTIVE COMPLIANCE

The DF-150E is in compliance with:

Low Voltage Directive (2002/73/23EEC).

EMC Directive (2001/89/336/EEC).

## DESCRIPTION

Power lead:

There are 3 options for the Power lead:  
22-28V dc, 1Amp (max)  
100-120V ac  
220-240V ac

Outputs:

Analyser supplied with a 0-10V dc output as standard

Mounting:

The DF-150E comes standard with a benchtop cabinet, but can be panel and rack mounted

User manual:

## Options

- American
- Voltage output
- Benchtop
- English

# DF-150E

## SPECIFICATIONS

Gas Type:	O <sub>2</sub>
<b>PERFORMANCE</b>	
Technology:	Coulometric non-depleting electrochemical sensor
Operating ranges:	0-1ppm up to 0-25%. * Any range between these ranges
Smallest recommended output range:	0-1ppm
Intrinsic error (accuracy):	The greater of +/- 3% reading or 0.5% of measurement range, but not lower than 0.05% of full analyser range for 3 range analysers
Response time (T <sup>90</sup> ) at sample flow rate:	<10 seconds at 0.75l/min
Zero drift/month:	Negligible
Span drift/month:	Negligible
Alarm:	Electrolyte condition
<b>OUTPUTS/INPUTS</b>	
Output:	Non isolated 0-10V dc
Output range:	Any range between 0-1ppm to 0-25%. *configuration dependent
<b>OPTIONS</b>	
Stab-El sensor system:	Enables operation with trace levels of acid gases or ionic contamination. Samples containing trace samples of acidic components must use the Stab-el option
Low flow/concentration alarms:	Up to 2 audible/visual concentrations alarms –Choice between 1 concentration alarm and low flow alarm or 2 concentration alarms
Relay contacts:	Up to 2 independently assignable contacts rated at 5 amps at 110 or 220V ac or 0.3 Amps at 30V dc for CE
Voltage output:	Choice of 0-1V dc, 0-2V dc, 0-5V dc non –isolated outputs
Analogue output:	Isolated 4-20mA dc output
Mounting:	Panel mount, 19" rack mount, & dual 19" rack mount options
Pump:	Integral diaphragm pump for negative pressures to 2psig (1.05mm Hg) vacuum or vent pressures to 3psig (155mm Hg)
Remote sensor:	Sensor mounted in NEMA 4 or NEMA 7 enclosure up to 300 meters from control unit. NEMA 4 enclosure can be heated
Sample pressure regulator:	Outboard 316 Stainless Steel Pressure Regulator, 3000psig (208 BarA) inlet capacity; 0-10psig (1.7 BarA) adjustable outlet pressure Requires 5psig (1.36 BarA) minimum inlet pressure
Absolute pressure regulator:	Vacuum to 500psig (35.5 BarA) inlet capacity; 4psia to 25psia (-10 to+10psig) (0.32 BarA to 2.7 BarA) adjustable outlet pressure
Flow control valve:	Up stream control for pressures less than 10psig (1.7 BarA)
Stainless steel outlet:	Recommended for flammable samples
Sample filter:	Stainless steel filter with standard or fine filter element (Not available with VCR welded sample inlet)
Flow control valve:	Integral upstream flow control valve (Not available on 0-50ppm range model or with VCR welded sample inlet)
Gas scale factor:	Background gas compensation for gases other than N <sub>2</sub> or Ar
<b>SAMPLE GAS</b>	
Temperature:	-18°C to 65°C (0°F to 150°F)
Dewpoint:	5°C (9°F) below minimum ambient
Conditions:	Oil free, non-corrosive, non-condensing, non-flammable
Particulates:	Filtered to 2µm
Vent:	Vent to atmosphere +/- 5psig (260mm Hg)
Sample flow:	0.5 to 1.4l/min
Sample pressure:	0.2 to 1psig (50 to 150mm Hg)

**NOTE:** For samples containing above trace levels of acidic components contact Servomex for sample preconditioning options

# DF-150E

## SPECIFICATION CONT.

### Ambient Conditions

Temperature: +0°C to +45°C (stable)  
Relative humidity: 0 to 95% RH non-condensing  
Altitude: 2000 meters above sea level

## UTILITIES REQUIRED

Power 22-28V dc, 1Amp (max) 110V ac or 220V ac 50/60Hz, 35 Watt maximum consumption  
ZERO Gas Not required  
SPAN Gas Any blend of O<sub>2</sub> in N<sub>2</sub> within the operating range of the sensor

## SAMPLE WETTED MATERIALS

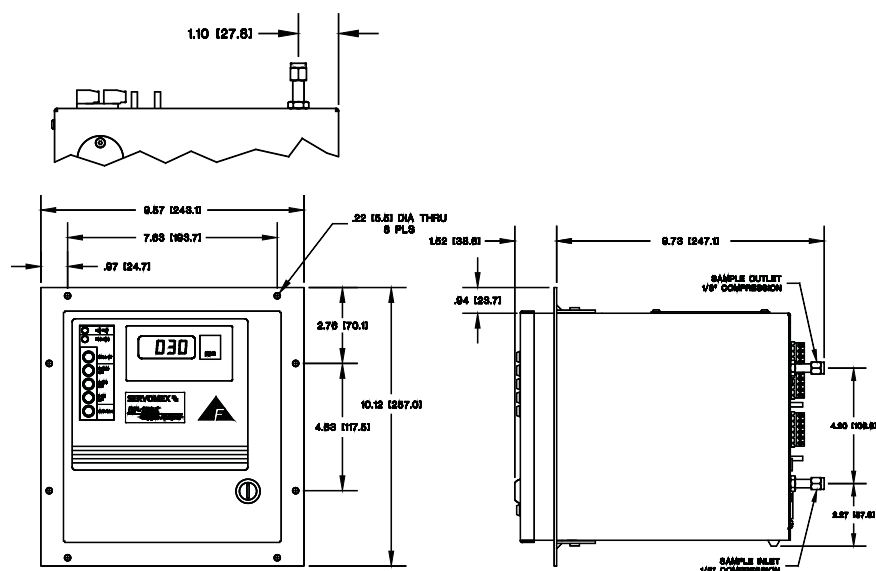
**Analyser fitted with:**  
Stainless steel  
G10 Epoxy  
Polypropylene  
Tygon

## 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.

## DIMENSIONS

All dimensions shown in inches (mm)



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