



# DF-330E Process Oxygen Analyzer

## Standard Features & Specifications

Effective: April 13, 2007

### Performance

**Accuracy:** (at constant conditions)  
 3,000 ppm. The greater of +/-5 ppm or +/- 3% of reading  
 25%. The greater of +/-0.10% or +/- 3% of reading  
 100%. The greater of +/-1.0% or +/- 3% of reading

**Oxygen Sensitivity** (minimum detectable change)

3,000 ppm 500 ppb  
 25% 0.05%  
 100% 0.1%

**Response Time** <10 seconds to 90% of a step change

**Ranges** 3,000ppm, 25% or 100%

**Ambient Operating Temperature**

32° to 176° F (0° to 80° C)

**Background Gas Compatibility**

Incompatible sample gases: containing hydrocarbons, combustibles, H<sub>2</sub>, CO, NO<sub>2</sub>, S, or Pb. Compatible sample gases: N<sub>2</sub>, Ar, and most Freons. For other gases contact factory.

### Gas Sample Conditions

**Sample Pressure**

Operating limits: Pressure: to 100 psig (7.9 BarA)  
 Vacuum: down to 300 torr

**Flow Rate:** Ambient to 3.0 SCFH (1.5 slpm)

**Temperature** (Gas Sample) 32° to 176° F (0° to 80°C)

**Moisture:** No limits (avoid condensation)

**Oil/Solvent Mist:** < 0.5 mg/ft<sup>3</sup> (standard)  
 > 0.5 mg/ft<sup>3</sup> – use filter

**Solid Particles:** < 2 mg/ft<sup>3</sup> (standard)  
 > 2 mg/ft<sup>3</sup> use filter

### Gas Flow System

**Construction Materials:** 300 Series stainless steel

**Gas Connections:** 1/8" compression tube fittings

**Remote Sensors:**

- RS1 Standard Flow Through Sensor for Remote Mounting w/Bracket <sup>NOTE 2</sup>
- RS2 Bulkhead Fitting for Mounting in Thin Walled Vessel <sup>NOTE 2</sup>
- RS3 VCR Fitting, 1 inch for UHP Systems <sup>NOTE 2</sup>
- RS4 NPT Fitting, 1 inch Plug for Thick Walled Vessels <sup>NOTE 2</sup>
- RS5 Flow Through "T" Section with ¼ Barbed Fittings For Flexible Tubings <sup>NOTE 2</sup>

### Construction

**Enclosure:** NEMA 1 - General Purpose

**Weight:** 10 lbs. (4.52 kg.) (NEMA 1)

**Dimensions:** 8.32" W x 7.75" H x 7.91" D  
 (21.1 cm W x 19.7 cm H x 20.1 cm D)

### Electrical

**Power Input** 110 VAC or 220 VAC, 50/60 Hz  
 22-28 VDC, 1 Amp (max)

### Output Signals

Non-Isolated 0-5, 10 VDC  
 Isolated 4-20 mADC(optional)

25% and 100% Ranges: User adjustable from 10% of Full Scale to Full Scale

3000ppm Range: User adjustable from 1% of Full Scale to Full Scale

User selectable Output Freeze during Calibration

**Alarms, audible/visual** 4 Oxygen (optional)  
 (Adjustable set-point)  
 Low Flow (optional)

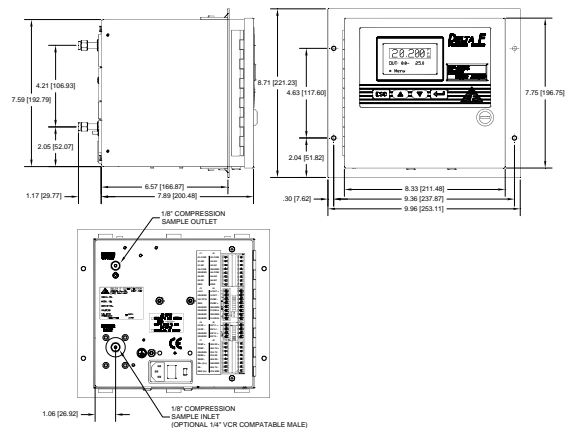
**Alarm Relays** 4 optional relays independently assignable to Alarms, In-Calibration, Sensor Off and Expanded Range Scale

**Alarm Relay Rating** 0.3 Amps at 30 VDC  
 Failsafe Action

**Back Lighted Display:** Supertwist LCD graphics

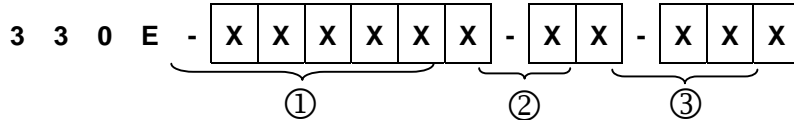
**Certifications:** CE Conformance

### Dimensions: NEMA 1 Enclosure (Panel Mount Optional)



# DF-330E Process Oxygen Analyzer

## Optional Equipment



### ① Range Options

Ranges	Resolution
0 to 3,000 ppm	H03000
0 to 25 %	S00P25
0 to 100%	S0P100

### ② Sensor Mounting Options

*Choose only 1 option*

- LS **Local Sensor in Benchtop Cabinet**
- RS1 **Standard Flow Through Sensor for Remote Mounting w/Bracket** <sup>NOTE 2</sup>
- RS2 **Bulkhead Fitting for Mounting in Thin Walled Vessel** <sup>NOTE 2</sup>
- RS3 **VCR Fitting, 1 inch for UHP Systems** <sup>NOTE 2</sup>
- RS4 **NPT Fitting, 1 inch Plug for Thick Walled Vessels** <sup>NOTE 2</sup>
- RS5 **Flow Through "T" Section with ¼ Barbed Fittings For Flexible Tubings** <sup>NOTE 2</sup>

### ③ Power Input Options

- 024 **22-28 VDC Input, 1 Amp (max)**
- 110 **110 VAC, 50/60 Hz, 1.3 Amp**
- 220 **220 VAC, 50/60 Hz, 1.3 Amp**

### General Purpose Cabinet Mounting

- 330-PM **Panel Mount** (9.97"Wx8.71"Hx6.58"D)
- 330-RM **19" Rack Mount** (19"Wx8.71"Hx6.58"D)
- 330-DRM **19" Dual Rack Mount**
- 330-KL **Key Lock**

### Outputs

- 330-420 **Isolated 4-20 mA DC output**
  - 330-220 **Isolated 4-20 mA DC output with a live zero at 4 mA and sensor off or disconnected at 2 mA**
  - 330-RS232 **RS232 Two-way Serial Communications**
  - 330-RS485 **RS485 Two-way serial communications**
  - 330-ERS-OUT **Expanded Range Scale**
- } Choose only 1
- Additional user selectable range scale for analog output once primary range is exceeded. (Requires optional relay contact for Range ID)

### Alarms <sup>Audible/visual only</sup>

- 330-OA2 **Two Oxygen Alarms**
- 330-OA4 **Four Oxygen Alarms**
- 330-FA **Low Flow Alarm**

### Relay Contacts <sup>NOTE 1 (Independently assignable)</sup>

- 330-RLY1 **One SPDT Relay Contact**
- 330-RLY2 **Two SPDT Relay Contacts**
- 330-RLY3 **Three SPDT Relay Contacts**
- 330-RLY4 **Four SPDT Relay Contacts**

### Plumbing

- 330-P **Pump with Down Stream Control Valve**  
Diaphragm pump for negative pressures to -2.0 psig vacuum (0.88 BarA), or outlet vent back pressure to 3.0 psig (1.2 BarA)
- 330-PR **Gauge Pressure Regulator**  
Out-board 316 Stainless Steel Pressure Regulator, 3000 psig (208 BarA) inlet capacity; 0-10 psig (1.7 BarA) adjustable outlet pressure. Requires 5 psig (1.36 BarA) minimum inlet pressure
- 330-SSOL **Stainless Steel Outlet Line**
- 330-FH **Stainless Steel Filter**
- 330-FCV **Upstream Flow Control Valve**

### Miscellaneous

- 330-PASS **Password Protection**
- 330-XTC-RS **Extension Cable per foot (for remote difusser sensors)**
- 330-SSTAG **Stainless Steel Tags**
- 330-EXT-SNSROFF **External Control of Sensor On/Off**
- 330-EXT-PUMPOFF **External Control of Pump**
- 330-SFE **Standard Filter Element (particle size >1 micron)**
- 330-FFE **Fine Filter Element (particle size <1 micron)**

#### Notes:

1. For use with system status indicators and optional alarms.
2. Each Remote Sensor includes a 10 ft cable with connector, sensor in a mechanical fitting and 6 in. pigtail with a connector. Not available with CE Certification.