DF-150E Oxygen Analyzer

Standard Features & Specifications

THE DIFFERENCE
DELTA F

Performance

Accuracy: (at constant conditions)
The greater of +/- 3% Reading or 0.5% of Range

Response Time

Responds instantaneously to O_2 change.
Typically less than 10 seconds to read 90% of a step change.

Range   Ranges are available
from 0-10 ppm to 25%

Ambient Operating Temperature

32º to 120º F (0º to 50º C)

Background Gas Compatibility

Standard Sensor:

All inert and passive gases including N_2, H_2, CO, freons,
hydrocarbons, etc.

Sensor with Stab-EL Option:

Neutralizes trace contaminants including acids such as
CO_2, H_2S, Cl_2, NO_X, SO_X, etc. (Consult Delta F for
concentration limits)

Gas Sample Conditions

Sample Pressure

Operating limits:

0.2 to 1.0 psig (1.03 to 1.08 BarA) - Standard
2.0 psi vacuum to 0.2 psig (.88 to 1.03 BarA) use pump
1.0 to 10 psig (1.08 to 1.7 BarA) use valve or regulator
Above 10 psig (1.7 BarA) use regulator

Sensor overpressure damage limit: 10 psig (1.7 BarA)

Return Pressure: Atmospheric Vent (optimal)
Limits   +5 psig (1.36 BarA) to –5 psig (0.67 BarA)

Flow Rate: 1.0 to 3.0 SCFH (0.5 to 1.5 slpm)

Temperature (Gas Sample)   0º to 150º F (-17.8º to 66ºC)

Moisture: No limits (avoid condensation)

Oil/Solvent Mist: < 0.5 mg/ft3 (standard)
> 0.5 mg/ft3 – use filter

Solid Particles: < 2 mg/ft3 (standard)
> 2 mg/ft3 use filter

Gas Flow System

Construction Materials: 304 and 316 SS

Gas Connections: 1/8" compression tube fittings

Construction

Enclosure: NEMA 1

Weight: 15 lbs. (7 kg.)

Dimensions: 7.75" W x 8.5" H x 10" D
(19.7 cm W x 21.6 cm H x 25.4 cm D)

Electrical

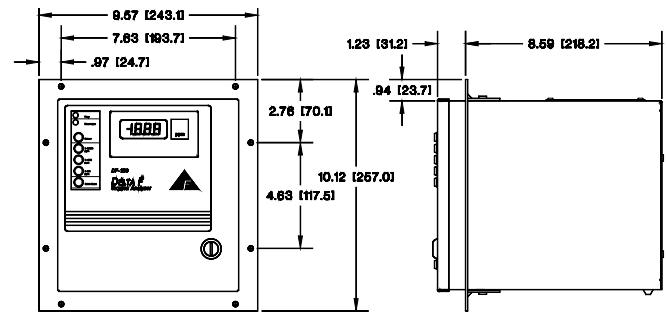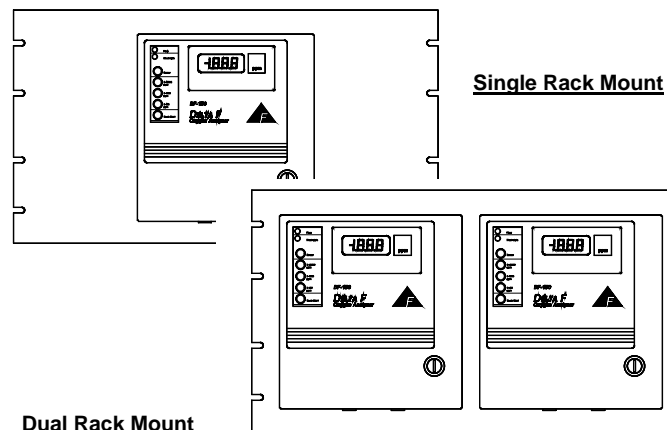|	
Power Input	115 VAC, 50/60 Hz or 230 VAC, 50/60 Hz
Output Signals	0-10 VDC (standard), **OR** 0-1, 0-2, 0-5 VDC (optional) Isolated 4-20 mADC (optional)
Alarm, visual	Electrolyte Condition (standard)
Alarms, optional *Choice of two*	Low Flow (relay contacts and visual), Low Oxygen or High Oxygen (adjustable set-point, relay contacts only)
Alarm Relay Rating	SPDT - 5 amps at 110 or 220 VAC CE version: 3 Amps at 30 VDC Failsafe Action
Indicators, optional	Sensor Off, Remote Range, Low Flow (contacts only) No Failsafe Action
Indicator Contact Rating	SPST – 0.5 amps at 24 VDC or SPTT - 0.5 amps at 24 VDC
Display:	3.5 Digit LCD 4.5 Digit LCD (range dependent)
Certifications:	ETLC CSA Equivalent Certification CE Conformance (optional)

Panel Mount

19" Rack Mount
Height: 10.46" [26.57 cm]
Depth: Same as Panel Mount (above)

Single Rack Mount

Dual Rack Mount

DF-150E Oxygen Analyzer
Optional Equipment

Base Models

Single Range Analyzers

PPM Range	DF-150E Model
0 to 5,000	151E-5000
1,000	151E-1000
500	151E-500
100	151E-100
50	151E-50
10	151E-10

% Ranges	DF-150E Model
0 to 25%	151E-P25
10%	151E-P10
5%	151E-P5
1%	151E-P1

Three Range Analyzers

PPM Ranges	DF-150E Model
100/1,000/10,000	153E-10000
50/500/5,000	153E-5000
10/100/1,000	153E-1000
5/50/500	153E-500
1/10/100	153E-100

% Ranges	DF-150E Model
0.25/2.5/25 %	153E-P25
0.1/1/10 %	153E-P10
0.05/0.5/5 %	153E-P5

Options

Base Options

150-S *Stab-El Acid Gas System*

150-220 *220 VAC Line Voltage* (110 VAC is standard)

150-CE *CE Conformance*
Provides added EMI/RFI and conducted interference immunity

Remote   *NOTE 1 & Choose only 1 Remote option*

150-RPC *Remote Pump Control*
Enables front panel analyzer control of user supplied external pump.
Power Capacity: 5W @110 VAC (Remote Pump not included)

150-RCOBP *Remote Control of On Board Pump*
Permits control of on-board pump via external, user supplied, switch or
analyzer front panel. Switch Rating: 5W @110 VAC
(On-board pump, 150-P, must be ordered separately)

150-RS *Remote Sensor*
Remote sensor with flowmeter and mounting bracket

150-N4RS *NEMA 4 Remote Sensor*
Includes remote sensor and flowmeter mounted in a NEMA4 enclosure

150-N7RS *NEMA 7 Remote Sensor*
Includes remote sensor mounted in a NEMA7 housing with an external
flowmeter, H2 Rated Flame Arrestors

150-RSH *Remote Sensor Heater*

Alarms   *Choose only 1 alarm option*

150-OAL *Oxygen Alarm – Low* (SPDT relay contacts)

150-OAH *Oxygen Alarm – High* (SPDT relay contacts)

150-FA *Low Flow Alarm* (SPDT relay and visual)

150-2OAL *Oxygen Alarms – Low-Low* (Two 150-OAL)

150-2OAH *Oxygen Alarms – High-High* (Two 150-OAH)

150-OALH *Oxygen Alarms – Low-High* (150-OAL & 150-OAH)

150-OAHF *High Oxygen &-Flow Alarm* (150-OAH & 150-FA)

150-OALF *Low Oxygen &-Flow Alarm* (150-OAL & 150-FA)

Indicators

150-SOI *Sensor Off Indication* (SPST contacts only)

150-RRI *Remote Range Indication* (SPTT contacts only)

150-LFI *Low Flow Indicator* (SPST contacts only) [NOTE 1]

Cabinet

150-PM *Panel Mount*

150-SRM *Single Rack Mount*

150-DRM *Double Rack Mount*

Plumbing

150-P *Pump with Down Stream Control Valve*
Diaphragm pump for negative pressures to 2.0 psi vacuum (0.88 BarA),
or outlet vent back pressure to 3.0 psig (1.2 BarA)
(Not compatible with NT-SSOL)

150-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

150-APR *Absolute Pressure Regulator*
Vacuum to 500 psig (35.5 BarA) inlet capacity; 4 psia to 25 psia (-10 to
+10 psig) (0.32 BarA to 2.7 BarA) adjustable outlet pressure

150-FCV *Flow Control Valve*
Up stream control for pressures less than 10 psig (1.7 BarA)

150-SSOL *Stainless Steel Outlet Line* [NOTE 2]

150-FH *Filter Housing*
(Includes Standard Filter Element, SFE)

Outputs   *Choose 1 only of 150-SAOA, B, or C*

150-SAOA *Special Analog Output 0 to 1 VDC*

150-SAOB *Special Analog Output 0 to 2 VDC*

150-SAOC *Special Analog Output 0 to 5 VDC*

150-420 *4 to 20 mA Isolated Output*

Miscellaneous

150-GSF *Gas Scale Factor*
Required for accurate read-out of Oxygen in one additional background
gas. Nitrogen is standard. He and H2 require the GSF. For other
Gases, contact Delta F.

150-SST *Stainless Steel Tag*

150-RSC *Remote Sensor Cable*

150-SFE *Standard Filter Element* (particle size >1 micron)

150-FFE *Fine Filter Element* (particle size <1 micron)

DF E-lectrolye Blue Electrolyte

DF RSA Replenishment Solution

Notes:
1. Not Available with CE Certified Analyzers
2. Suggested for flammable gases. Not available with on-board pump, 150-P.