

**Vx-3100**

**Verionix**

# Process Gas Analyzer

for Atmospheric Pressure Applications



## In-situ / In-line Process Gas Metrology

Detect faults, drifts and changes in process chemistries  
Real-time: Reports changes in composition up to 10 times per second

## 1 Torr to 15 psig Operating Range

Compatible with sub- to above atmospheric processes  
No pumps, orifices or multipass optics required

## Configurable. Detects Multi-gas Mixtures

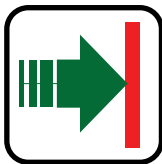
Fingerprint "good" and "bad" processes and error conditions  
Sensitive to many gas species including Inerts and Diatomics

## Compact: Easy to Integrate and Use

Can be directly attached to chamber or foreline  
No external RF power supplies or computers needed

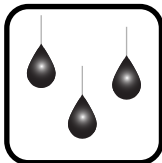
## Select Applications

### Endpoints of Atmospheric Processes



Detect completion of complex chemistries  
Process fingerprinting and change analysis  
Sub-atmospheric to Above-atmospheric pressures

### Water Vapor Levels



Detect changes in oxidation processes in real-time  
Assess state of drying processes (Lyophilization)

### QC of Gas Quality and Gas Handling Systems



Monitor changes in gas quality at source  
Measure transient and steady-state performance of Gas Cabinets, MFCs, Valves



**Verionix** viewer



PC-based • Display, record & replay data  
Troubleshoot processes • Send/receive signals  
Develop scripts for Embedded Mode

## Vx-3100 High-Pressure Process Gas Analyzer

### Overview

*Gas Species Detected :* Multiple gas species (User configurable)  
*Process Compatibility:* Vx-3100: Inert/benign gases and chemistries  
*Technology:* Optical Emission Spectroscopy using proprietary and integrated SSR microplasma, spectrometer, microprocessor and RF power supply

### Performance

*Spectrometer Performance:* 200 to 850 nanometer wavelengths (UV-VIS)  
16-bit full-scale resolution, 1950 wavelength lines  
*Data Sampling Rate:* Up to 10 per second (Contact factory for details)  
*Detection Limit:* To low PPB levels (Application dependent)  
*Accuracy:* ± 1.5% (Full scale)  
*Stability:* ± 1.5% (1-σ, 8 hours @ Constant temperature)

### Gas Sampling Interface

*Process Ambient Environment:* 1 Torr to 15 psig (1.3 to 2,040 milliBar)  
*Vacuum Fitting:* NW40 (Contact factory for other options)  
*Maximum Flange Temperature:* 100°C (For higher temperatures, contact factory)  
*Serviceability:* Sensor cell is field replaceable

### Control Interfaces

*Graphical User Interface:* Via PC running *Verionix Viewer* or third-party  
*Standard Interfaces:* RS-232 serial (DB-9 connector)  
Ethernet TCP/IP (RJ-45 connector, Modbus TCP)  
*Optional Interfaces:* Analog (4 In / 4 Out, 0-4.1 VDC @ 12 bits)  
Digital (4 In / 4 Out, 0-5 VDC, TTL, NO)  
*Operating Modes:* Embedded Mode (No external PC needed to run)  
Engineering Mode (External PC required)

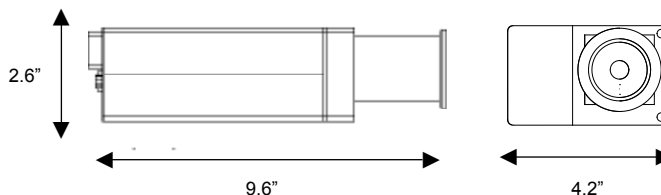
### Facilities

*Operating Temperature Range:* 0-50°C (Non-condensing, Sensor cell 100°C)  
*Power Requirements:* 20-30 VDC @ 3A (AC / DC converter available)  
*Power Consumption:* < 20 watts (typical, steady-state operation)  
*Carrier Gases:* None required  
*Mounting Options:* Direct mount via NW40 flange

### Approximate Dimensions and Weights

*Dimensions:* 2.6" T x 4.2" W x 9.6" L  
(66mm x 107mm x 250mm)

*Weight:* 4.4 pounds (2.0 kg)



### Verionix Incorporated

240 Andover Street • Wilmington, MA • 01887 • USA  
Tel: 978-253-4902 • FAX: 978-945-0798  
Email: Sales@Verionix.com web: www.Verionix.com

Verionix technology is protected by multiple United States and/or foreign patents.  
All features and performance specifications are subject to change without notice.

© 2008 Verionix Incorporated. All rights reserved. P/N 910010R8 (July 2008)

Vx-3100