Process Insights™
Premium Insights Into Process

REAL-TIME GAS ANALYZERS

PRODUCT BROCHURE

MAX300-AIR™

Environmental Mass Spectrometer

Fast Response

Process Control

Stable Measurement

- Ambient Air Monitoring
- Flare Gas Analysis
- Industrial Health and Safety

Introducing the MAX300-AIR

Be Safe, Be Clean, Be Compliant

Mass spectrometry is a powerful tool for environmental analysis. In today's world, successful manufacturers are concentrating their efforts on safety and regulatory compliance. Often, this makes the fast, accurate analysis of air and stack gas samples essential. The MAX300-AIR™ uses cutting-edge quadrupole mass spectrometer technology to measure contaminant levels in air, or process samples, from multiple points within the facility, and reports these values to the control system in real-time.

Based on decades of proven performance in industrial hygiene and ambient air monitoring, the MAX300-AIR provides the stability and precision of a laboratory-grade analytical instrument in a rugged platform optimized for continuous operation in a manufacturing environment.

Features

- Quantitative analysis of individual contaminants
- PPT detection limits
- Analysis time in seconds
- Multiport sample systems for total site monitoring
- Precision & accuracy for safety and regulatory reporting
- Minimal maintenance required

MAX300-AIR Measurements

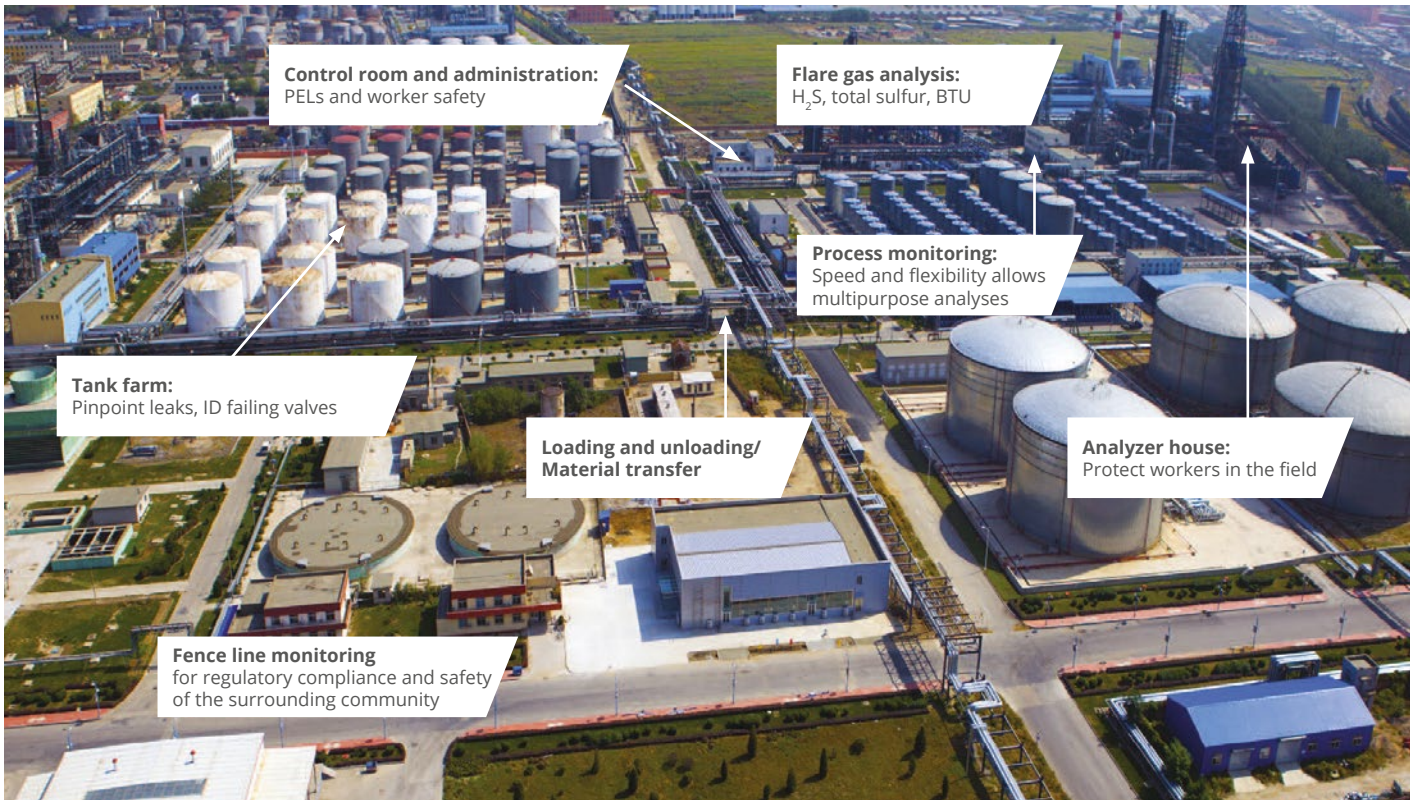
Toxic chemical release
Total sulfur
TWA exposure values
BTU (energy content)
Explosive limit analysis

Industrial Sites

Petrochemical
Polymer resins
Pesticides/herbicides
Ammonia fertilizer
Semiconductor
Synthetic fibers
Pharmaceutical solvents
Detergents
Adhesives

The MAX300-AIR measures trace levels of almost any industrial contaminant:

Hydrogen sulfide
Benzene
Toluene
Xylene
Styrene
Chlorobenzene
Acetone
Acrylonitrile
Acetonitrile
Vinyl acetate
Arsine
Freons
Ethylene dichloride (EDC)
Vinyl chloride monomer (VCM) Trichloroethane
Carbon tetrachloride
Dimethyl sulfide (DMS)
Dimethyl sulfate (DMSO4) Ammonia
Cyclohexane
Methyl ethyl ketone (MEK)
Methyl tertiary-butyl ether (MTBE) Methyl iodine
Vinyl bromide
Dioxanes
Pyrrole



Sampling Configuration:

16, 31, 40, 80, 120, 160+ Sample Points

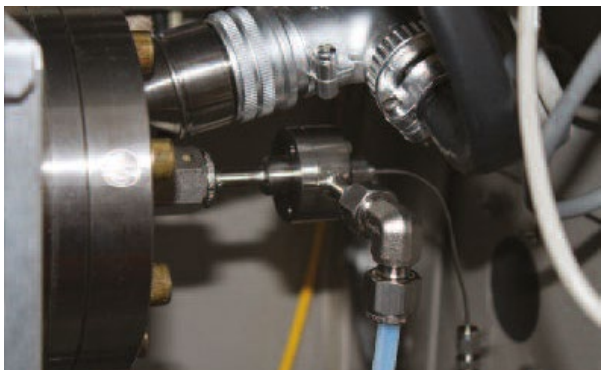
The speed of the MAX300-AIR allows one analyzer to monitor sample points spread throughout the site without sacrificing fast updates. Rotary valve options with 16 and 31 ports exist for smaller installations, while the high-flow, zero dead-volume FASTvalve can pull sample from 40, 80, 120, 160, or more points.

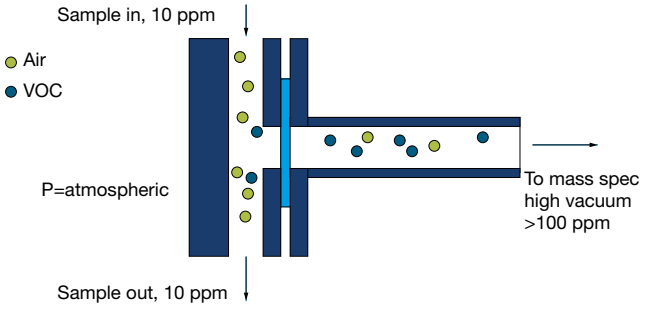
MAX300 FASTvalve Includes:

- High flow sample pump
- Complete flow rack system
- Temperature control up to 200°C
- Multiple valves can be installed in series

Ultra Trace Detection Membrane Inlet Mass'

The membrane inlet uses a silicone material to concentrate VOCs relative to the air in the sample. A MAX300-AIR with the membrane inlet has the sensitivity to measure **low ppt contamination**.



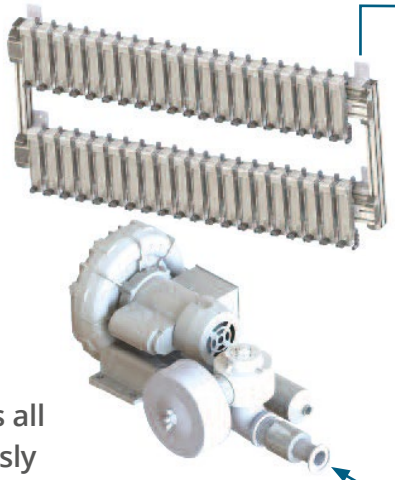


MAX300-AIR Low Detection Limit (LDL) Examples		
Compound	Standard LDL	Membrane Inlet LDL
Benzene	10 ppb	**10 ppt**
Pyrrole	10 ppb	**10 ppt**
VCM	20 ppb	**2 ppt**

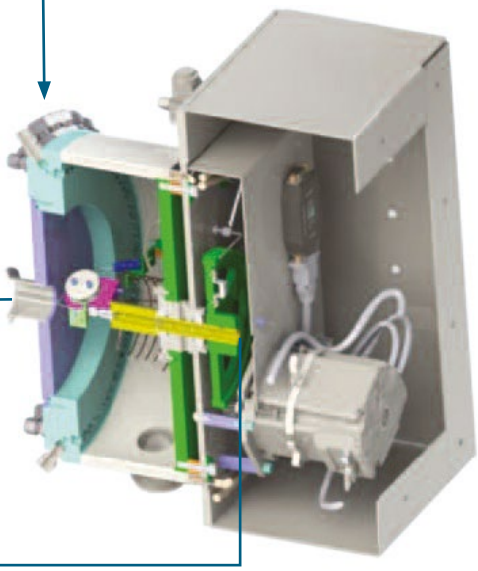
Extrel's FASTvalve System For Total Plant Monitoring

Optional sample point filter

Typical Sample Tubing:
- 1/8" or 1/4"
- PTFE
- Stainless Steel
- Coated Steel



High flow pump loops all samples simultaneously



MAX300 FASTvalve

Data to the Control Room/PLC
Transmission options:
- 2 Wire
- 4 Wire
- Fiber optic

SPEED, SENSITIVITY, FLEXIBILITY

The MAX300-AIR is an analytical platform with the sensitivity to measure trace level contamination and the speed to provide a single analyzer solution for total site monitoring.

System Highlights

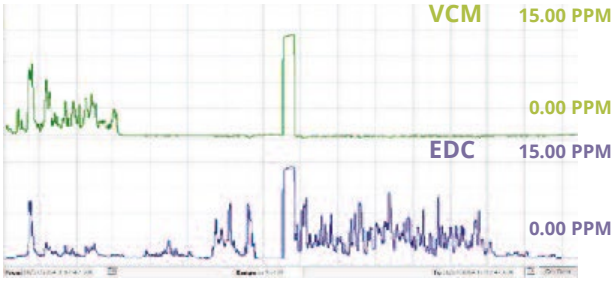
Detectable compounds:
Any gas or vapor sample
Detection range: 100% - 10 ppb standard, 10 ppt with membrane inlet*
Number of sample streams:
16, 31,40, 80, 120, 160+
Analysis rate: <0.4 seconds per component
Number of components: Unlimited
Number of analysis routines: Unlimited
Number of user configurable data tags:
Unlimited
Analysis precision:
<0.25% relative standard deviation**
Stability: <0.5% relative standard deviation over 30 days**
Dual filaments: One active and one spare with automatic switchover
Maintenance: Typically two PMs per year
Manual or fully-automated calibration and validation
Mass range options: 1-200, 300, or 500 amu
19 mm high-transmission quadrupole filter

* Documented on trace benzene in air.
** Based on the analysis of 1% argon.

Low Maintenance, Easy to Use

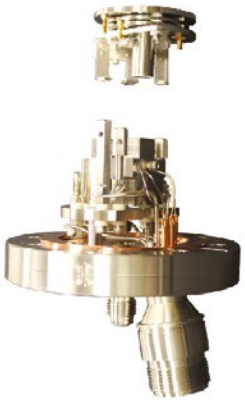
The Questor5 software that drives the MAX300-AIR is designed for fully-automated, industrial site monitoring, measuring all sample points in a fully-customizable sequence. The intuitive web-based interface allows the user to check instrument status, pull up data, or run a validation sequence from anywhere on the plant network, while maintaining government and industry security standards for login and electronic record keeping (21 CFR 11).

Combining a powerful, user-friendly interface with industrial-grade hardware, the MAX300-AIR is a 24/7 environmental analyzer with a documented uptime >98%.



PPM level breakouts of VCM and EDC. The MAX300-AIR provides accurate speciated data, free of inference, despite the chemical similarities of the two components.

Extrel's 19 mm quadrupole next to a common 6 mm filter. The larger device provides greater ion transmission for unparalleled sensitivity and signal stability.



The MAX300-AIR disposable, plug-and-play ionizer eliminates the cleaning requirement. It includes dual filaments: one active and one spare.

MAX300-AIR System Specifications

Power Supply Options:
- 110 VAC, 50/60 Hz, Two 15 Amp circuits
- 230 VAC, 50/60 Hz, One 20 Amp circuit

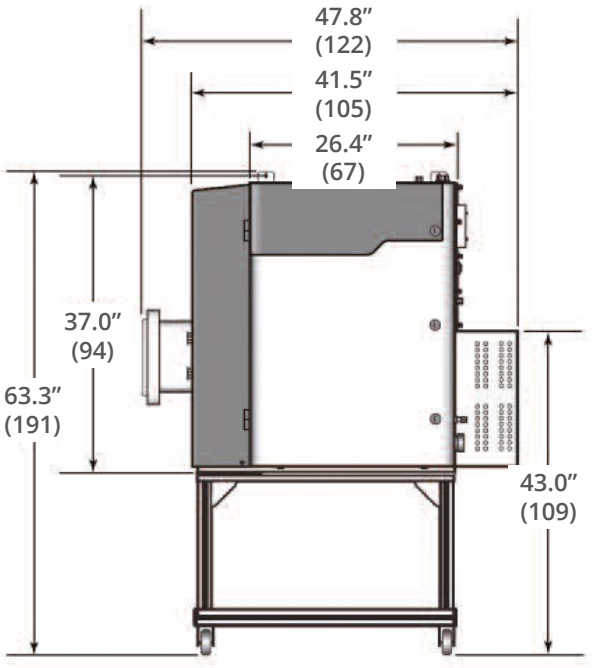
Power Consumption:
- Nominal 2500 Watts
- Startup 2750 Watts
- Heat Load: 2500 Watts (8500 BTU/Hr)

Weight:
- Standard Enclosure: 420 lbs (190 kg)
- ATEX Enclosure: 560 lbs (254 kg)
- Optional cart: 40 lbs (18 kg)

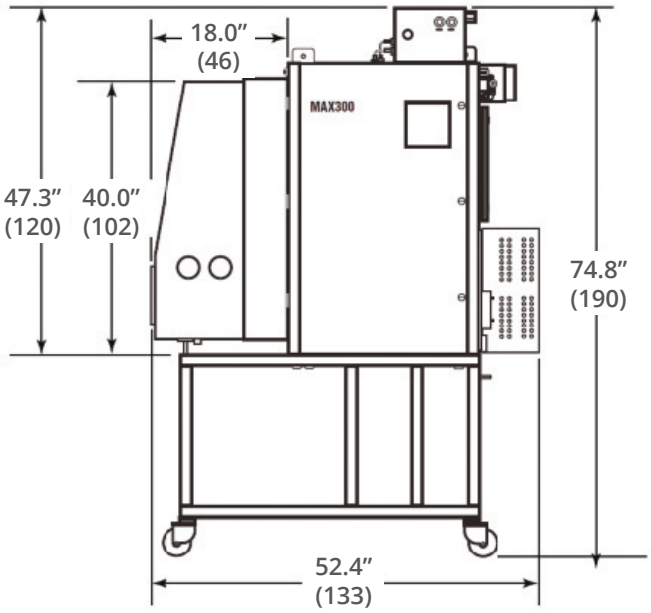
Ambient Requirements:
- Temperature: -4°F to 120°F (-20°C to 49°C)
- With A/C, cold start ≥54°F (12°C)
- Area Classification Options:
- General Purpose
- Class 1, Division 2 Groups B, C, D, T3
- Class 1, Division 1 Groups B, C, D, T3
- ATEX Zone 1 or Zone 2, Group II B +H2, T4

Additional Utilities:
- Purge gas (for hazardous area installations)
- Base calibration requirement: 2 gas bottles

Data System and Communications:
- System control interface options: Ethernet, RS-422 4-wire
- Login security levels: Administrator, User, Viewer
- External communications:
  - Ethernet, Modbus serial, digital I/O, analog I/O, OPC



MAX300-AIR standard enclosure dimensions with A/C and Cart



MAX300-AIR ATEX enclosure dimensions with A/C and Cart

Dimensions shown in inches [cm]

Exceptional Worldwide Service and Support

For over 50 years, we are committed to providing the highest quality support services for the thousands of instruments installed worldwide. Factory trained and certified personnel offer industry-leading support to our customers at every stage of the environmental monitoring application.

Process Insights™
Premium Insights Into Process

REAL-TIME GAS ANALYZERS

GAIN REAL-TIME INSIGHT INTO YOUR PROCESS

Process Insights manufactures and delivers premium sensors, monitors, detectors, analyzers, instrumentation, and software that are mission-critical to keep your operations, personnel, and the environment safe – every day across the globe.

Get the most reliable, precision analytical technologies available on the market today. We will work to match your needs and budget, and provide the optimal, and most stable process analysis solution for your application.

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Process Insights – The Americas

4140 World Houston Parkway Suite 180, Houston, TX 77032, USA +1 713 947 9591

Process Insights – EMEA

ATRICOM, Lyoner Strasse 15, 60528 Frankfurt, Germany +49 69 20436910

Process Insights – APAC

Wujiang Economic and Technology, Development Zone, No. 258 Yi He Road, 215200 Suzhou, Jiangsu Province, China +86 400 086 0106

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