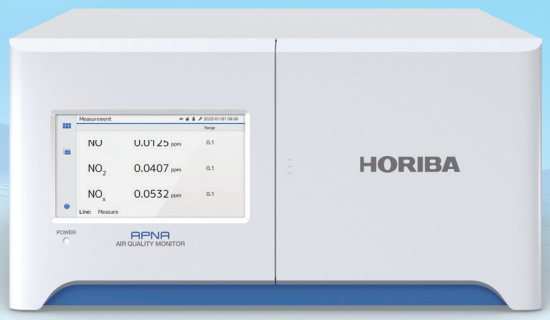
HORIBA

Nitrogen Oxides Monitor

APNA-380 NOx NO2 NO

For Your Needs in Air Quality Monitoring



Ultimate Performance

- Optimized internal structure enables rapid switching between NOx and NO lines, allowing real-time continuous measurement and unparalleled trackability
- Cross-modulation chemiluminescence provides excellent sensitivity, stability and robustness
- Wide measurement range with up to 8 ranges selectable, minimum 0-0.1 ppm and maximum 0-20 ppm
- Enhanced Lower Detection Limit and response time

Connected & Intelligent

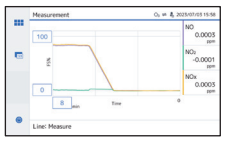
- Remote operation from various devices: PC, tablet or smartphone
- Modbus® TCP and RTU communication
- USB flash drive can be utilized for data storage

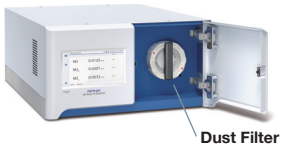
* Standard specification is wired LAN connection. For wireless connection, separate device is required.

User-Friendly Interface & Functionality

- Durable 7-inch wide color touch screen LCD with intuitive interface and trend graph
- Selectable metrics (ppb, µg/m³, ppm, mg/m³), response time (moving average value), and calculation method
- Programmable dilution ratio
- Dust filter accessible from the front panel for easy daily maintenance

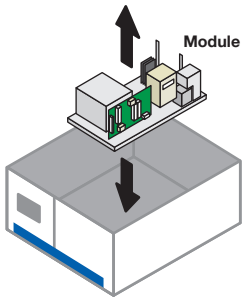
Trend Graph Screen





Module Design for Various Needs & Customizations

- Each standalone module, powered by DC 24 V, is capable of providing measurement results
- Customizable for stationary, wall mount, mobile or portable installations
- Easy integration of multiple AP-380 measurement modules into air quality monitoring station or dilution continuous emission monitoring system (CEMS)



Reduced Operational Expense & Maximum Uptime

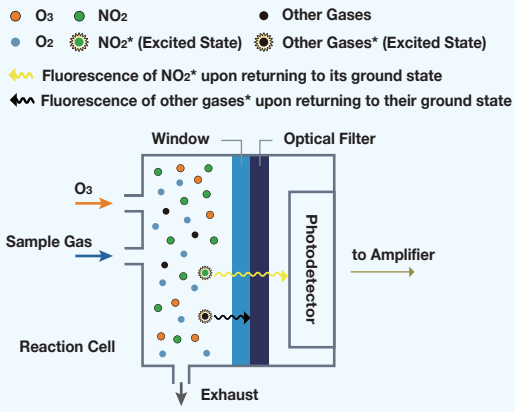
- Remote diagnostics allow fast and effective maintenance
- Internal parts timer with alarm facilitates timely parts replacement, optimizing parts stock
- Module design enables easy and fast replacement at field
- High-quality, long lifetime parts for maximum uptime

Environment-Friendly Design

- Ozone generator with low environmental impact and clean exhaust
- Remote operation reduces emission from transportation, contributing to the reduction of carbon footprint
- Approx. 8%* reduction in power consumption
- Lightweight design. Weight reduced on approx. 15%*
- Long life parts reduce environmental load

* In-house comparison with previous model.

Measurement Principle



Cross-Modulation Chemiluminescence

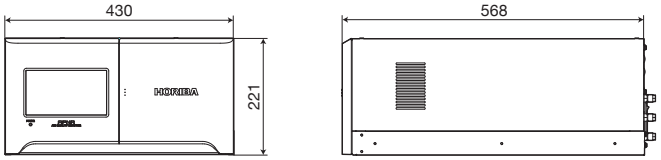
The chemiluminescence method is based on the principle that molecules, when exited by energy obtained from a chemical reaction, emit light as they return to their ground state. This method is utilized in nitrogen monoxide (NO) analyzer. The sample gas is introduced into a reaction cell where NO in the gas undergoes chemical reaction with ozone (O_3). As a result of this reaction, nitrogen dioxide (NO_2) is produced, a portion of NO_2 becomes excited and emits light when returning to its ground state. The emitted light selectively passes through an optical filter and detected by a photodetector, allowing for the measurement of NO gas concentration. An actual multi-component gas analyzer (NO, NO_2, NOx) employing the cross-modulation mechanism uses the sample gas, the gas with nitrogen oxides (NOx) in the sample gas converted to NO through a catalyst, and the zero-reference gas. These gases are sequentially flowed into the reaction cell, enabling the measurement of gas concentrations of NO and NOx. The concentration of NO_2 is calculated based on the difference between concentrations of NOx and NO. In addition, zero drift is reduced by introducing the zero-reference gas into the reaction cell. Consequently, the APNA-380 achieves high measurement accuracy and can measure multiple gas concentrations.

APNA-380 Specifications

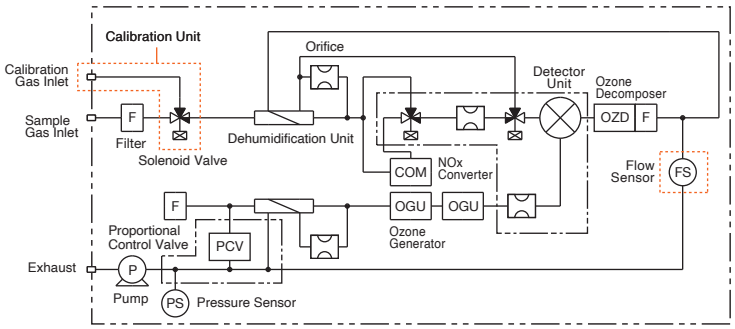
Component	Nitrogen oxides (NO, NO_2, NOx)
Measuring principle	Cross-Modulation Chemiluminescence
Measurement range	0-0.1/0.2/0.5/1.0/2.0/5.0/10/20 ppm (up to 8 ranges selectable, auto-range)
Lower Detection Limit (2σ)	< 0.4 ppb*1*2
Measurement unit	ppb, ug/m^3, ppm, mg/m^3
Sample gas flow rate	Approx. 0.7 L/min
Repeatability	±1.0% of full scale
Linearity	±1.0% of full scale
Zero drift	< 0.4 ppb (24 h)
Span drift	< 0.5% of full scale (24 h)
Response time (T_{95})	< 40 s from the inlet*2
Display	7-inch color LCD with touch panel
Communication	Ethernet × 2 (Modbus® TCP), RS-232C × 1 (Modbus® RTU), USB flash drive × 1
Analog output (option)	Maximum : 3 channels (insulated) DC 4-20 mA, DC 0-0.1 V, DC 0-1 V, DC 0-5 V or DC 0-10 V
Digital output (option)	Relay contact output for range 3 channels, relay contact output for other 6 channels
Digital input (option)	Maximum : 4 channels, non-isolated input
Installation environment	Operation temperature : 0-40°C (32-104°F), relative humidity : 85% or less
Temperature and pressure compensation	With
Sampling pump and filter	Internal
Power supply	AC 100-240 V±10% (max. voltage: AC 250 V) 50/60 Hz, consumption 140 W
Dimensions, weight	430 (W) x 568 (D) x 221 (H) mm, Approx. 18 kg
Compliance	CE, UKCA, KC, FCC, China RoHS

*1 : For ranges less than 2 ppm *2 : Digital filter
・If there is other measurement range requirement than shown above, please consult HORIBA
・Modbus is a trademark of Schneider Electric USA Inc.

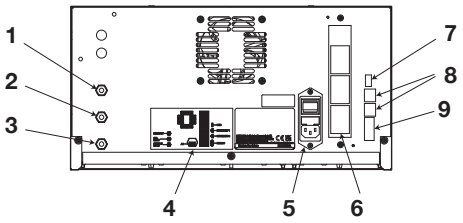
Dimensional Outline (Unit: mm)



Flow Sheet



Rear Panel Configuration



1. Exhaust
2. Calibration gas inlet (option)
3. Sample gas inlet
4. Guide label
5. AC power connector
6. I/O terminal block
7. USB flash drive connector
8. Ethernet connector
9. RS-232C connector

Options

- I/O terminal block (Analog input/output, digital input/output)
- Pressurized calibration unit ▪ Flow sensor ▪ USB flash drive
- Mounting parts (rubber feet, brackets and slide rails, brackets for slide rails)

Under Certification: TÜV, US EPA, MCERT, CAEPI, KTL, JMOE

IMS The HORIBA Group adopts IMS (Integrated Management System) which integrates Quality Management System ISO9001, Environmental Management System ISO14001, and Occupational Health and Safety Management System ISO45001.
We have now integrated Business Continuity Management System ISO22301 in order to provide our products and services in a stable manner, even in emergencies.

⚠ **Please read the operation manual before using this product to assure safe and proper handling of the product.**

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