HORIBA
Process & Environmental

Sulfur Dioxide Monitor
APSA-380 SO_2

For Your Needs in Air Quality Monitoring

Ultimate Performance

- Ultraviolet fluorescence technology provides excellent sensitivity, stability and robustness
- Real-time continuous measurement
- Wide measurement range with up to 8 ranges selectable, minimum 0-0.05 ppm and maximum 0-20 ppm
- UV fluorescence detector and integrated HC cutter eliminate interference from moisture and coexisting components
- Incorporated UV lamp intensity compensator
- Enhanced Lower Detection Limit and response time

Connected & Intelligent

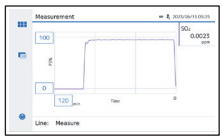
- Remote operation from various devices: PC, tablet or smartphone
- Modbus® TCP and RTU communication
- USB flash drive for data storage

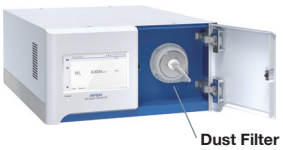
* Standard specification is wired LAN connection. For wireless connection, separate device is required.

User-Friendly Interface & Functionality

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

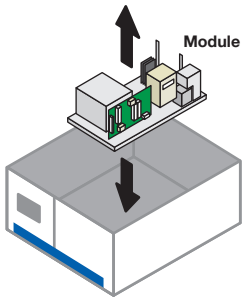
Trend Graph Screen





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 station (CEMS)



Reduced Operational Expense & Maximum Uptime

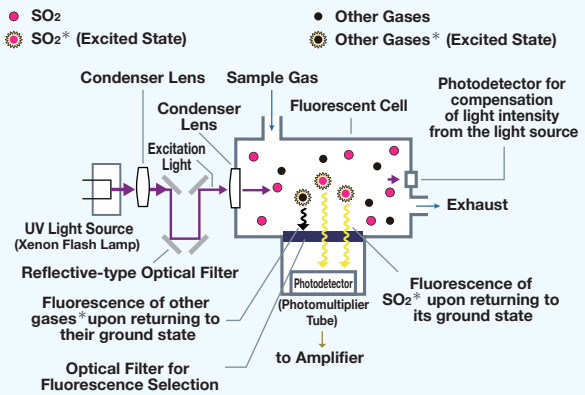
- Remote diagnostics allow fast and effective maintenance
- Internal parts timer with alarm facilitates timely parts replacement, optimizing parts stock
- Module design enables easy and fast replacement at field
- High-quality, long lifetime parts for maximum uptime

Environment-Friendly Design

- Remote operation reduces emission from transportation, contributing to the reduction of carbon footprint
- Approx. 20%* reduction in power consumption
- Long life parts reduce environmental load

* In-house comparison with previous model.

Measurement Principle



Ultraviolet Fluorescence (UVF)

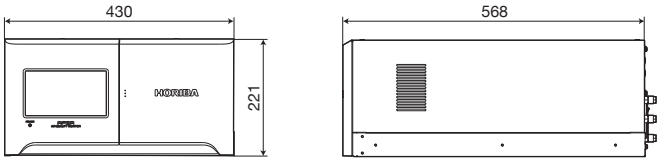
The Ultraviolet Fluorescence (UVF) method utilizes the phenomenon of fluorescence, where substances absorb ultraviolet radiation and re-emit it as light. In the UVF-based sulfur dioxide (SO_2) analyzer, the sample gas is introduced into a fluorescence cell. The SO_2 in the sample gas absorbs UV radiation, gets excited, and emits fluorescence when returning to its ground state. The emitted fluorescence is selectively transmitted through an optical filter and detected by a photodetector to measure the concentration of SO_2 gas. In actual SO_2 gas analyzer, several factors such as decreased light intensity of the ultraviolet light source and interference from gases other than the measured component (SO_2) (especially aromatic hydrocarbons) affect the accuracy of the measurement. To compensate for the decreased intensity of the ultraviolet light source, the change in intensity of light source is measured using a compensation photodetector, which automatically corrects the SO_2 concentration. To reduce the fluorescence caused by interfering gases in the sample gas, aromatic hydrocarbons are removed by a unit called an HC cutter. The APSA-380 gas analyzer incorporates these measures to achieve high measurement accuracy and long-term stability.

APSA-380 Specifications

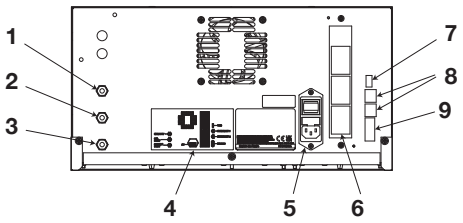
Component	Sulfur dioxide (SO_2)
Measuring principle	Ultraviolet Fluorescence
Measurement ranges	0-0.05/0.1/0.2/0.5/1.0/5.0/10/20 ppm (up to 8 ranges selectable, auto-range)*3
Lower Detection Limit	< 0.3 ppb*1*2
Measurement units	ppb, ppm, mg/m^3, ug/m^3
Sample gas flow rate	Approx. 0.6 L/min
Repeatability	±1.0% of full scale
Linearity	±1.0% of full scale
Zero drift	< 0.5 ppb (24 h)
Span drift	< 0.5% of full scale (24 h)
Response time (T_{95})	< 120 s from the inlet*1
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) DC4-20 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°F to 104°F), relative humidity : 85%RH or less
Sampling pump and filter	Internal
Power requirements	AC 100-240V ±10% (max. voltage: AC 250 V), 50/60 Hz, consumption 50 W
Dimensions, weight	430 (W) x 568 (D) x 221 (H) mm, Approx. 18 kg
Compliance	CE, UKCA, KC, FCC, China RoHS

*1 : Digital filter *2 : For ranges less than 1 ppm *3 : 2nd point calibration is required in case of using higher than 1 ppm range
・If there is other measurement range requirement than shown above, please consult to HORIBA
・Modbus is a trademark of Schneider Electric USA Inc.

Dimensional Outline (Unit: mm)

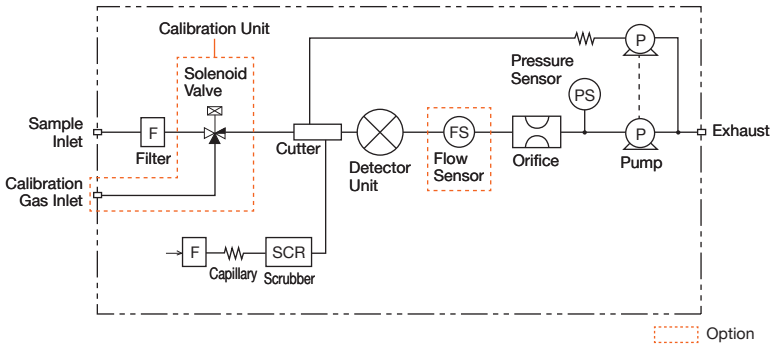


Rear Panel Configuration



1. Exhaust
2. Calibration gas inlet
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

Flow Sheet



Options

- I/O terminal block (Analog input/output, digital input/output)
- 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.

HORIBA
HORIBA, Ltd.
Group Head Office
2 Miyanohigashi-cho, Kisshoin, Minami-ku, Kyoto, 601-8510, Japan
Phone: 81 (75) 313-8121 Fax: 81 (75) 321-5725
http://www.horiba.com

Worldwide locations of HORIBA

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