# Other analyzers



Non-Contact Infrared Thermometer

IT-545

#### Temperature

This is an easy-to-use portable thermometer with the highest level of accuracy in the industry\* maintenance, food temperature management, etc.



Gloss Checker

#### **IG** series

This gloss checker provides easy measurement of surface gloss levels, by quantifying the surface appearance visual inspection. Ideal for automotive coating inspections, floor waxing coating inspections etc



**Environmental Radiation** Monitor

#### PA series

γ (gamma) rays

This is a portable monitor that allows easy and accurate measurement of gamma rays. It is equipped with data communication function, enabling automatic recording of measured data and dose mapping, in linkage with a smartphone or computer.



Oil Content Analyzer

#### **OCMA-500** series

Oil content

This analyzer measures oil content in water or seawater, residual oil on machine parts, and oil content in soil, etc. Easy to operate, this analyzer delivers speedy



Multi Parameter Water Quality Checker

#### U-50 series

pH / Dissolved oxygen / Electrical conductivity / Turbidity / Oxidation-reduction potential / Salt content / Specific gravity of seawater / Total dissolved solid quantity / Water temperature / Water depth / GPS

Many items can be measured simultaneously with one probe This portable checker is best for measurements of river water, lake water, well water, and ground

Brazil



The HORIBA Group adopts IMS (Integrated Management System) which integrates Quality Management System IS09001, Environmental Management System IS014001. and Occupational Health and Safety Management System OHSAS18001.

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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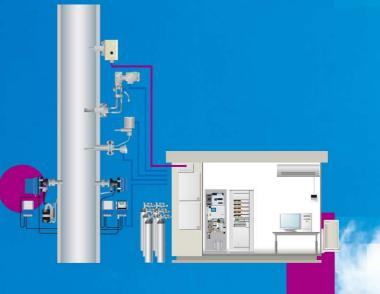
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**HORIBA** 



Process & Environmental





**AQMS** 

**Analytical System Integration** 

**PROCESS** 



WQMS



Bulletin:HRE-1942B

Explore the future





Overview The Air Quality Monitoring System (AQMS) is a facility to measure

customized to monitor multiple sites via one system

wind speed, direction, other weather parameters, concentration of

air pollutants (such as SO<sub>2</sub>, NOx, CO, O<sub>3</sub>, THC etc), and particulate

matters continuously all year round. Mobile AQMS can also be

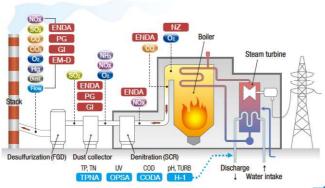


The measured data can be remotely monitored and exported in various formats to the local/central authorities. The data can be published via the Internet for easy public access to raise awareness on current air pollution levels. This way, the public can prevent outdoor activities and reduce health impacts during heavy polluted days.

## Main Products

APMC-370

## Sample measurement points of a general small/medium sized power facility with HORIBA analyzers



Required parameters by law are measured continuously at a stack and reported to the government by the Continuous Emission Monitoring System (CEMS). De-NOx process (SCR) needs to monitor NOx and NH<sub>3</sub>. and De-SOx (FGD) process needs to monitor SO<sub>2</sub> to optimize the process operation.

Overview The Continuous Emission Monitoring System (CEMS) is a facility to measure flow, dust, concentration of air pollutants (such as SO<sub>2</sub>, NOx, CO etc), and other parameters according to requirements. Required parameters depend on the type of stationary source.

The system as the facilitator

to optimize "Industrial Process"

CEMS as the eye

→ To DCS (ELECTRONICS ROOM)

for "Various Plants"

AP-370 series APDA-371 PX-375 APDA-372 Main Products

ENDA-5000 series GI-700 series PG-300 series ENDA-7000 series ENDA-C9000 series EM-D/F5000

Water Quality Monitoring System

# WQMS

Process Analyzer System

Understanding the life cycle of water is essential for us to live on the earth. Water will be consumed, polluted, treated, discharged, and then returned as our water resource again through various sources such as rain. It is especially critical to monitor the waste water discharge from a factory to protect our

# WQMS as the gardian to protect nature life source "Water"



Water infrastructure Water resources Treated water

Main Products

H-1 series **OPSA-150** 48/96 series CODA-500 **TPNA-500** 

production efficiency.

GA-370E NZ-5000

The example of sample measurement point of refinery plant with HORIBA analyzers

In an oil refinery, the crude oil will be converted to final products (Gasoline, Naphtha, etc.) through several processes such as distilling, cracking etc. HORIBA analyzers are utilized to optimize the process and increase

Overview Process Analyzer System is a facility to measure necessary parameters such as hydrocarbons to help optimize the manufacturing process. The analyzer is chosen that best meets the customer requirements.

Overview Water Quality Monitoring System (WQMS) is a facility to measure pollutants such as Chemical Oxygen Demand (COD), Total Phosphates (TP), Total Nitrogen (TN), etc. The required parameters are customized according to the type of factory and discharge regulations.

#### ■ Air Pollution Analyzer

#### AP-370 series

NO<sub>X</sub>, SO<sub>2</sub>, CO, CO<sub>2</sub>, O<sub>3</sub>, H<sub>2</sub>S, NH<sub>3</sub>, THC, NMTHC, CH<sub>4</sub>, NMVOC

NOx: 0-0.1/0.2/0.5/1.0 ppm SO<sub>2</sub>: 0-0.05/0.1/0.2/0.5 ppm CO: 0-5/10/20/50 ppm

CO<sub>2</sub>: 0-500/1000 ppm

O<sub>3</sub>: 0-0.1/0.2/0.5/1.0 ppm H<sub>2</sub>S: 0-0.05/0.1/0.2/0.5 ppm

NH<sub>3</sub>: 0-0 1/0 2/0 5/1 0 ppm THC, NMTHC, CH<sub>4</sub>: 0-5/10/20/50 ppmC

NMVOC: 0-2000ppm

- \* Other ranges are also available. Please consult HORIBA.
- Long term stable drift by Cross Flow Modulation technology.
- Automatic calibration function enables setting of start time and the interval to reduce operation. - Multi-range function automatically switches the range to the best suited, depending on measured gas

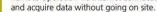
CE, TÜV, FCC, MCERTS, GOST, KC, JAPAN etc

# ■ Continuous Particulate Monitor with X-ray Fluorescence

### PX-375

Particulate Matter (PM10/PM2.5/TSP)

- Particulate mass concentration and element concentration
- 0-200/500/1000 µg/m<sup>3</sup>
- \* Other ranges are also available. Please consult HORIBA.
- Continuous hourly analysis of PM mass and the elemental concentration by a single unit directly in the field.
- Adoption of world proven technologies: X-ray fluorescence & Beta-ray attenuation, advanced analysis for prevention of air pollution.
- Remote Operation via internet connection enables user to check status





#### ■ Beta-Ray Attenuation type Dust Analyzer **APDA-371**

- PM2.5, PM10, TSP
- Standard: 0-1000µg/m<sup>3</sup>
- \* Other ranges are also available. Please consult HORIBA.
- Long term unattended remote operation of up to 60 days between site visits.
- Hourly filter advances minimize effects of volatile compounds. - Integrated data logger allows the connection of up to six additional meteorological sensors.
- CE, TÜV, US EPA etc

#### ■ Light Scattering type Dust Analyzer

#### APDA-372

PM1, PM2.5, PM10, TSP

Particle size: 0.18 - 100 µm Number: 1 - 20000 particle/cm3

Mass: <0 - 1500 μg/m<sup>3</sup>

\* Other ranges are also available. Please consult HORIBA.

- Continuous real-time measurement of PM values simultaneously with
- additional information through particle number concentration.
- Time resolution adjustable from 1sec up to 24hr.
- LED light source with high stability, long lifetime and durability.

#### ■ Multi Gas Calibrator

#### **APMC-370**

- NO, SO<sub>2</sub>, CO, CO<sub>2</sub>, O<sub>3</sub>, H<sub>2</sub>S, NH<sub>3</sub>
- \* Other parameters are also available. Please consult HORIBA
- Dynamic generation of span gas by dilution system. Integrated zero gas generator or external zero gas generator (ZNV-7) is also available. Multipoint calibration: 8 individually adjustable cycles, each with up to 20 calibration points and each calibration cycle runs also automatically.
- Precision of span gas concentration: better than 1%, Linearity of span gas concentration: better than 1%.



### Air Quality Monitoring System

ORIBA has more than 50 years experience providing ambient monitoring solutions, recognized bound the world. HORIBA has supplied over 15,000 units with the major share in many regions. He monitoring station is tailor-made according to the customer's request. HORIBA can provide veral types of stations, cabinets, calibration equipment and more to meet your challenging







#### ■ On-line Industrial Water Quality Analyzer

## H-1 series

Measument items

Certificates & Complia

Range

pH, ORP, Conductivity, Resistivity, Residual chlorine, Dissolved oxygen, Turbidity, MLSS, Fluoride ion, NH4-N

pH: 0 to 14pH ORP: -2000 to 2000 mV

Conductivity: 0.0 to 200.0 mS/cm 0.00 to 20.00, 0 to 2000 µS/cm

Resistivity: 0.000 to 2.000 M $\Omega$  · cm 0.00 ot20.00 k $\Omega$  · m Residual chlorine: 0 to 3 mg/L

Dissolved oxygen: 0 to 20 mg/L Turbidity: 0 to 2 degree(min.), 0 to 4000 degree(max)

MLSS: 0 to 2000mg/L

Fluoride ion: 0 to 10000mg/L

NH4-N: 0 to 1000mg/L

- \* Other ranges are also available. Please consult HORIBA.
- H-1 series comprehensively suits all kinds of water applications, ranging from purified water monitoring to waste water monitoring.
- Lineup with focus on robustness, functionality and maintainability that responds to harsh conditions at the installation sites. - Essential functions for water analyzer management such as noise resistance, auto calibration, self-diagnosis, and full interface.

#### CE, FCC etc

### ■ Panel Types Water Quality Measuring Instruments

## 48/96 series

- pH/ORP/Conductivity/Resistivity/Dissolved Oxygen/Residual Chlorine
- Please consult HORIBA.
- Well-developed status indicator icons.
- Setting with the front-panel keys. - Utilization of lead-free solder.
- CE, FCC etc

### ■ Organic Pollutant Monitor

## **OPSA-150**

- UV absorbance, VIS absorbance, Converted COD level, Converted BOD level, Converted TURB level
- UV absorbance, VIS absorbance
- 0-0.1 Abs to 0-5.0 Abs (Can be set 0.1 Abs increments)
- HORIBA's unique rotary cell length modulation sensor ensures no zero-drift as well as covers a wide measurement range from as low as 0 to 0.1 Abs, up to 0 to 5.0 Abs, while providing a minimum resolution of 0.0001Abs.
- Sample error alarm comes as a standard feature.
- OPSA-150 offers data storage to save up to one year of data and continuous cell wiper system which greatly reduces maintenance
- CE, FCC, CPA, KC etc





0-20 mg/L

■ Automatic COD Monitor

- 0-30, 40, 50, 100, 200, 500, 1000, 2000 mg/L (1-dilution type) \* Other ranges are also available. Please consult HORIBA
- Small amount of reagent consumption (0.5-2ml/measurement) and
- innovative reagent delivery service provides easy handling and low
- 2 measurement methods for different sample types and applications.
   Direct heating method requires no cooling water.
- CE, FCC, KC etc

### ■ Automatic Total Nitrogen/Phosphorus Monitoring System

#### **TPNA-500**

- Total Nitrogen and phosphorus
- Total nitrogen: 0-2, 5, 10, 20, 50, 100, 200, 500, 1000 mgN/L Total phosphorus: 0-0.5, 1, 2, 5, 10 20, 50, 100, 250 mgP/L \* Other ranges are also available. Please consult HCRIBA.
- Adoption of meniscus measurement method and enhanced automatic washing functions (option) contributes to the lengthening the maintenance cycle.
- Reduction in power consumption by approx. 30%, with pure water usage and waste water generated reduced to 1/2. HORIBA's state-of-the-art technology and measurement
- methods delivers high reliability. ■ CE, FCC, KC etc
- Range
- Certificates & Compliance





# ing a variety of water quality analyzers and systems which are designed according to the er's request. HORIBA has unrivaled knowledge and expertise to provide a suitable system











# CEMS

Continuous Emission Monitoring System

analyzer technologies and sampling systems. HORIBA has supplied more than 100,000 units so for tems that comply with regulations in various regions such as Europe, US, China and







■ Stack Gas Analyzer

### **ENDA-5000** series

NOx, SO<sub>2</sub>, CO<sub>2</sub>, CO, O<sub>2</sub>

NOx: 0-200 to 5000ppm SO<sub>2</sub>: 0-200 to 5000ppm CO2: 0-5 to 25vol%

CO: 0-200 to 5000ppm O2: 0-10 to 25vol%

- \* It can be set to dual ranges. Range ratio shall be within factor 10 as standard.
  \* Other ranges are also available. Please consult HORIBA.
- Cross Flow Modulation type NDIR stabilizes operation with no optical adjustment and zero drift to give longer life time.
- Integrated analyzer with promised performance sampling unit established from more than 50 years experience in this field.
- Special magneto-pneumatic O2 detector providing non carrier gas and non direct contact with sample gas provides less running cost and longer life time.
- CE, TÜV, US EPA, FCC, KC, JAPAN etc

Stack Gas Analyzer

#### **ENDA-7000** series

NOx, SO2, CO, CO2, O2, NH3

NO<sub>x</sub>: 0-10 to 5000ppm CO2: 0-5 to 25 vol% SO<sub>2</sub>: 0-10 to 5000ppm O2: 0-10 to 25vol% CO: 0-50 to 5000ppm NH<sub>3</sub>: 0- 10 to 100ppm

- \* It can be set to dual ranges. Range ratio shall be within factor 10 as standard \* Other ranges are also available. Please consult HORIBA.
- Reliable, accurate and sensitive range measurement with accepted methods including Cross Flow Modulation type - NDIR, Chemiluminescence, Ultraviolet, and Magneto-pneumatic technology.

Dilution CEMS: AP-370 series

Multi-Component Gas Analyzer: VA-5000 series

- 6 components can be measured simultaneously with multiple detector in a single analyzer.
- Easy to operate the test for US EPA such as CGA, Linearity, RATA etc with the integrated software's.
- CF. FCC. US FPA etc.

Related

Products





■ De-NOx Process Gas Analyzer **ENDA-C9000** NH<sub>3</sub>, NO<sub>x</sub>, O<sub>2</sub> NH<sub>3</sub>: 0-20 to 100ppm NOx: 0-20 to 100ppm

O2: 0-5 to 25 vol%

\* It can be set to dual ranges. Range ratio shall be within factor 10 as standard. Other ranges are also available. Please consult HORIBA.

- Accurate measurement with sensitive range for NH<sub>3</sub>.
- Zero drift free Chemiluminescence detector (NH<sub>3</sub>/NO<sub>x</sub>) and Magneto-pneumatic detector (O<sub>2</sub>)

■ Stack Gas Analyzer

NOx, SO₂, CO, CO₂, O₂, NH₃

SO<sub>2</sub>: 0-10 to 5000ppm

CO: 0-50 to 5000ppm

■ CE, FCC etc

NOx: 0-10 to 5000ppm CO2: 0-5 to 25 vol%

\* Other ranges are also available. Please consult HORIBA.

6 components can be measured simultaneously

- Capability of combining with other system utilizes

combustion measurement in variety of industries.

with multiple detectors in a single analyzer.

GI-700 series

(Special model with CFM technology for System Integrator)

O<sub>2</sub>: 0-10 to 25vol%

\* It can be set to dual ranges. Range ratio shall be within factor 10 as standard.

methods including Cross Flow Modulation type - NDIR,

- Reliable, accurate and sensitive range measurement with accepted

Chemiluminescence, Ultraviolet, and Magneto-pneumatic technology.

NH2: 0- 10 to 100ppm

- Various useful functions such as hour meter, data logger, or trend graphs enhance maintenance performance

**■** JAPAN etc

Measument items

Range

Certificates & Complian



■ Stack Gas Dust & Flow Analyzer

#### EM-D/F 5000 series

Dust, Opacity, Gas velocity, Volume flow

Dust: 0- 0.5 to 10,000 mg/m<sup>3</sup>

Opacity: 0-100% Velocity: 0-3 to 50 m/s

Volume flow: 0-3000000 Nm<sup>3</sup>/h

- \* Other ranges are also available. Please consult HORIBA.
- Automatic calibration function to reduce operation work load Certified performance analyzer in the world.
- Volume flow measurement is available with combination of
- pressure and temperature monitors.

■ CE, KC, TÜV, US EPA etc





# ■ Transportable Gas Analyzer

#### PG-300 series

NOx, SO2, CO, CO2, O2, CH4

NOx: 0-25/50/100/250/500/1000/2500ppr

SO<sub>2</sub>: 0-200/500/1000ppm CO: 0-200/500/1000/2000/5000ppm

CO2: 0-5/10/20vol%

O2: 0-5/10/25vol% (Zirconia or Galvanic), 0-10/25 vol% (Paramagnetic) CH<sub>4</sub>: 0-2000/5000ppm or 0-50/100%

\* There are several combinations and ranges available. Please consult HORIBA for more information.

Capable of up to 5 component measurement simultaneously

with built-in sampling unit.

- Max 5 days continuous measurement is available and necessary data and trend graph can be stored in an integrated data logging function.

User-friendly functions such as an integrated instruction manual can be accessed from the LCD display

CE, TÜV, FCC, MCERTS, GOST, CPA, KC, JAPAN etc

# RIBA

# **PROCESS**

Process Analyzer System

system integration facility in Houston USA which was previously well known as PAAI. We can of a total package such as system design, engineering, application development, and on-site maintenance services. We are able to provide process analytical systems which not only use







■ Multi-Component Gas Analyzer

## VA-5000 series

CO, CO2, NOx, SO2, CH4, N2O, NH3, O2

CO: 0-50 to 100vol%

CO<sub>2</sub>: 0-50 to 100vol%

NOx: 0-20 to 0-5000ppm

SO<sub>2</sub>: 0-100 to 10vol% CH<sub>4</sub>: 0-200 to 100vol%

N<sub>2</sub>O: 0-100 to 5000ppm

NH<sub>3</sub>: 0-100 to 0-5000ppm

O2: 0-5 to 100vol% (MPA and Paramagnetic which is only available in Europe)

0-5 to 25vol% (Galvanic and Zilconia)

It can be set 5 ranges. Range ratio shall be within factor 10 as standard. Other ranges are also available. Please consult HORIBA.

- A single analyzer can contain three small sensor modules out of more than seven different gases to provide many

Multiple gas components with wide selection of ranges (from ppm to %) assure high precision and flexibility for

- Capability of combining with other system utilizes any measurement in variety of industries.

■ CE, FCC, KC

Related

**Products** 



Process Gas Chromatograph: Other brand

Any process analyzer can be integrated in the system

#### ■ Trace Gas Analyzer **GA-370**

CO, CO2, CH4, N2O

0-1/2/5/10 ppm

It can be set 4 ranges. Range ratio shall be within factor 10 as standard.

\* Other ranges are also available. Please consult HORIBA. - Measures impurities in bulk gas used in semiconductor

and other high-purity gases used in clean rooms, medical facilities and manufacturing processes.

Assured minimum detection sensitivity 10 ppb provides high precise measurement values.

- All metal tubing employed internally to prevent dirt and to enhance safety in handling H2 and O2 gas.

#### ■ Explosion-proof Gas Analyzer

### 51 series (EIA-51d/p, TIA-51d/p, TCA-51d/p, MPA-51d/p, PMA-51d)

CO, CO<sub>2</sub>, CH<sub>4</sub> etc (EIA, TIA)

H<sub>2</sub> (TCA) O<sub>2</sub> (MPA, PMA)

EIA: 0-0.11 to 100 vol% TIA: 0-50 to 2000 ppm TCA: 0-10 to100vol%

MPA/PMA: 0-5 to 25vol% \* It can be set to multiple ranges. Range ratio shall be within factor 10 as standard

\* Other ranges are also available. Please consult HORIBA.

Hydrogen explosion proof (IIB+H<sub>2</sub>), IEC60079 compatible.

Self diagnosis and daily management function.

- Design features high visible LED light indicating operation status for instant recognition.

■ CE, FCC, JAPAN (Explosion proof) etc



Certificates & Compliance

# ■ Tunable Laser Hydrogen Chloride Analyzer

### HCI

Please consult HORIBA.

- Laser analyzer requires non-sampling which enables direct measurement and quick response.

Probe type optical system saves installation cost and maintenance cost. HORIBA's original calibration mechanism allows analyzer to calibrate

\* Will be released in spring 2017.



#### ■ In Situ Oxygen Monitor

### NZ-5000

O2

0-ppm to 100%

- Continuous measurement of O2 in stack gas with deviation of only 0.2% from the measured value.

- Electronically monitored pneumatic unit for reference air and calibration gas. (optional)

- Explosion-proof type is also available

CE, TÜV etc



