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HOTHUA

Iron and steel

processing

**Steam boilers** 

# Stack-gas analysis system ENDA 5000 series

### NOx, SO2, CO, CO2, O2 Continuous simultaneous 5-component analysis

0 M P A C T Uses half the space of previous models.

E A S Y Features an intuitive touch panel.

LONG-TERM STABILITY

Uses NDIR for better long-term stability

and reliability.

generation plants

**Electric power** 

Sulfuric acid plants

Refuse incinerators

112
20
20
20
1

Glass furnaces

Non-leaded solde
Product has been
the mass of older
<ul> <li>Uses 25% less el</li> </ul>

Non-leaded solder used for Printed Circuit Boards. Product has been reduced to about 52% the size and 28% the mass of older similar products.

Uses 25% less electricity (200 VA) than older similar products.

# The ENDA-5000 series of stack-gas analysis systems

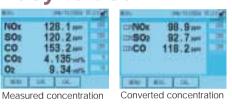


### **Continuous simultaneous and high-precision** measurement of NOx, SO<sub>2</sub>, CO, CO<sub>2</sub>, and O<sub>2</sub>

Over 100,000 systems installed and 30 years of guality and experience. That is the base on which HORIBA's new ENDA-5000 series of stack-gas analysis systems is built. These systems have a smaller footprint, and use cross-flow modulated non-dispersive infrared (NDIR) detection with a magnet-pneumatic detection method that is inherently drift-free. The ENDA-5000 series are superior continuous analysis systems that are perfect in the difficult field of exhaust gas measurement, where measurement errors cannot be tolerated. The series features a new intuitive touch panel that makes every operation available with the touch of a single button. The ENDA-5000 series systems are also designed for faster, more efficient maintenance. They are ideal for a variety of uses, including monitoring steam boiler, refuse incinerator, and electric power generation plant emissions to assure pollution standards are being met.

MEAS.	180	/18/2004 1	6:2t 💽
NOx	128	.1m	200
S02	120	.2 ppr	- 200
CO		.2 ppre	200
CO2		35 vel%	- 5
02	9.	34 vol%	-10
	COF. /	GAL.	

E a s y Features an intuitive touch panel. Easv to use





Correction history

Alarm history

The ENDA-5000 series systems use a large-format LCD touch panel that can display all five critical components (NOx, SO<sub>2</sub>, CO, CO<sub>2</sub>, O<sub>2</sub>) simultaneously. The touch panel also allows the operator to view the density variations of multiple components at once. The operator can easily switch between the corrected and converted density settings screens or view alert information with the touch of a single button.

# 

### Uses half the space of previous models. Compact (all maintenance can be) done from the front be)

The ENDA-5000 series systems takes up only half the space of older similar systems (such as 3-cylinder type systems), and are the smallest of any stack-gas analysis systems available in the world.\* As a result, anyone, including those who previously gave up on stack-gas analysis for lack of space, can now use them. They can be installed almost anywhere, with ample room on all sides for easy access and much easier maintenance. The blowback panel has also been reduced by almost onethird (to about 77% of the old size). Thanks to the ENDA-5000 series system's small size, they help save space even when permanently installed, and free up valuable floor area for other equipment.

\* As of 2003, according to HORIBA's research.

Better alerts and extra alerts

In addition to the alert functions available in the past, the ENDA-5000 series systems feature extra alert functions. A continuous checking process can prevent the unit from stopping due to a failure, reducing the risk of failed measurements and assuring consistent operation.

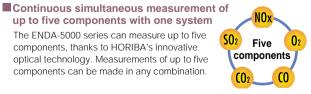
#### Dramatically reduced correction time for SO2

Corrections of SO<sub>2</sub> measurements using wet base methods of the past took a great deal of time (about 15 minutes), but with the ENDA-5000 series system's dry base method, correction takes only three minutes.



Correction for interference The interference correcting sensor uses a unique interference filter to compensate for the influence of interference by other gases.

components, thanks to HORIBA's innovative





# offers options for a variety of uses, all based on HORIB

### Sampling sections

The ENDA-5000 series's sampling sections use cost-effective parts for maintenance, and offer a variety of sample gas conditioning systems, each suitable for a different kind of gas. HORIBA's know-how has created the best possible system for every type of sample gas measurement.

#### Sample gas probe with easy-to-change filter element



- An innovative dehumidifying system minimizes loss of soluble components.
- A mist catcher in the sample flow path removes SO<sub>3</sub> and prevents damage and line blockage.
- Long-lasting, low-temperature (180°C) NO₂ → NO converter prevents corrosion.

#### New pressure control \*

The new pressure control method is compatible with Daily start-up and shutdown and other intermittent operations. \* Older models used a water filled pressure trap.

#### Blowback panel reduced in size



In the past, a large blowback panel was necessary to control dust when measuring high-dust gas samples. HORIBA has used its innovative technology to reduce the size of the blowback panel by almost 25% (to 350 [W] x 550 [H] x 180 [D] mm). The panel

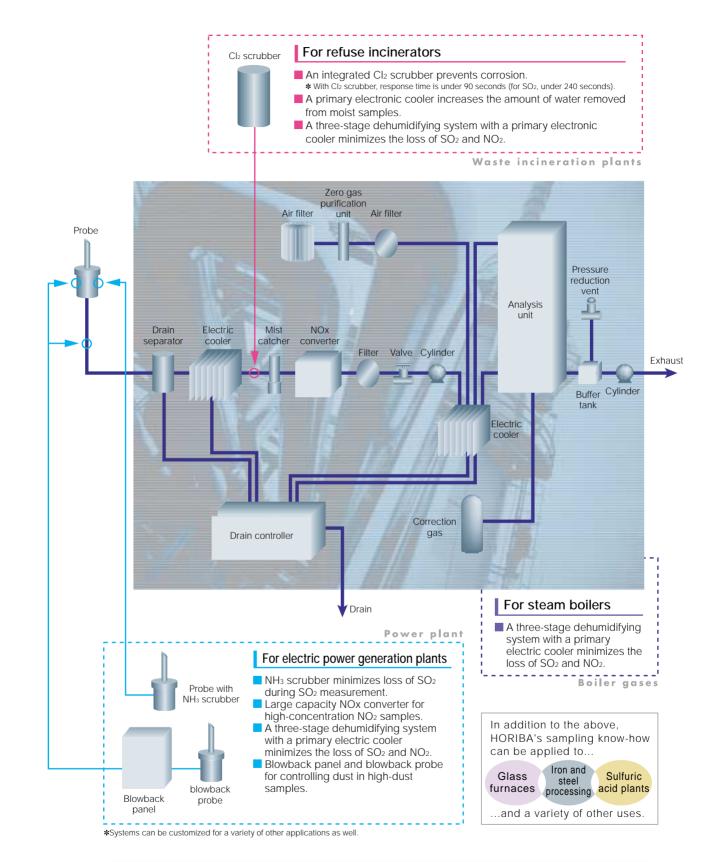
is also lighter, and can be mounted on a wall. The new blowback panel can be used even in extremely small spaces.



### Models and components measured

NOx	SO <sub>2</sub>	CO <sub>2</sub>	СО	<b>O</b> 2	Model
					ENDA-5120
					ENDA-5130
					ENDA-5140
					ENDA-5150
					ENDA-5160
					ENDA- <b>5220</b>
					ENDA- <b>5230</b>
					ENDA- <b>5240</b>
					ENDA- <b>5250</b>
					ENDA- <b>5300</b>
					ENDA- <b>5310</b>
					ENDA- <b>5320</b>
					ENDA- <b>5340</b>
					ENDA- <b>5350</b>
					ENDA- <b>5370</b>
					ENDA- <b>5400</b>
					ENDA- <b>5410</b>
					ENDA- <b>5420</b>
		•			ENDA- <b>5440</b>
					ENDA- <b>5450</b>
		•			ENDA- <b>5470</b>
		•			ENDA- <b>5500</b>
					ENDA- <b>5510</b>
		•			ENDA- <b>5520</b>
		•			ENDA-5530
		•			ENDA- <b>5600</b>
					ENDA-5610
					ENDA-5620
					ENDA-5630
		•			ENDA- <b>5700</b>
					ENDA- <b>5800</b>

# A's extensive know-how.



HORIBA has a great reputation and over 30 years in the stack-gas analysis field. We will be happy to tailor the sampling section and options of the ENDA-5000 system to suit your particular needs. We look forward to answering your questions about everything from installation to full-time use.

# The ultimate in dependability and reliability

## LONG-TERM STABILITY

Cross-flow modulated non-dispersive infrared (NDIR) detection is renowned for long-term stability. Long-term stability

No need for optical adjustments

With cross-flow modulated non-dispersive infrared (NDIR) detection, the sample gas is mixed with a reference gas in a single sample cell. Therefore there is no need to adjust two different optical paths so that they are balanced.

#### A stable zero point

Since the ENDA-5000 series systems output the difference between the measured gas and the reference gas each time measurement occurs (once a second), the zero point is extremely stable.

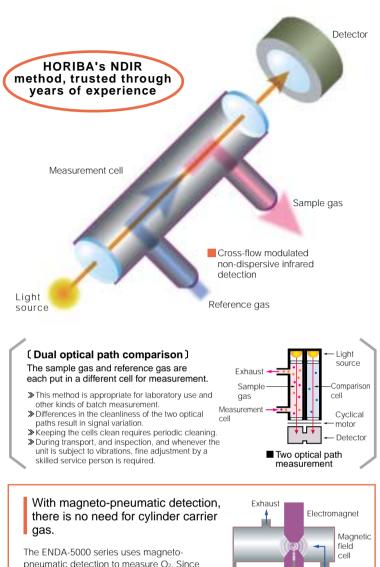
#### Continuous cleaning keeps the cell clean

Since cleaning air is fed into the sample cell in between each batch of sample gas, the cell resists contamination and normally remains clean. This reduces span drift and makes the equipment safe and stable for long periods of time.

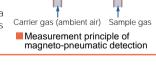


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- A CO<sub>2</sub> sensor constantly measures and makes corrections to compensate for CO<sub>2</sub> interference in NOx measurements.
- An interference compensation detector compensates for interference from H<sub>2</sub>O during NOx and SO<sub>2</sub> measurement.



The ENDA-5000 series uses magnetopneumatic detection to measure O<sub>2</sub>. Since the sample gas does not come into direct contact with the detector, there is no deterioration due to corrosion, which enables long-term stable operation. What's more, thanks to HORIBA's innovative technology, in which ambient air is used as a carrier gas, there is no need for a carrier gas supply, which translates into lower costs.



Detector

Continuous correction is provided by a sensor that is designed to detect CO<sub>2</sub> interference during NOx measurement.

- The systems feature an automatic recalibration function that calibrates the system every seven days.
- A variety of types functions (up to 12 kinds of output)
  - Instantaneous output (NOx, SO<sub>2</sub>, CO, CO<sub>2</sub>, O<sub>2</sub>)
  - O<sub>2</sub> calculated output values (NO<sub>2</sub>, SO<sub>2</sub>, CO)
  - Moving average values (for one to four hours)
- Ambient air is used as the carrier gas, which allows for installation in smaller spaces and lower running costs.

Automatic

recalibration

2

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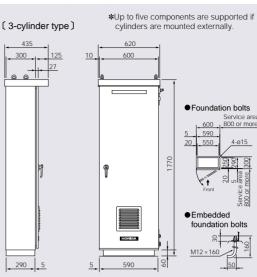
#### Environmentally friendly thanks to lower electrical draw

These systems use 25% less electricity (200 VA) than older similar models.

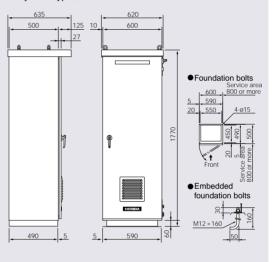
#### Specifications

Component         NOx         SO:         CO         CO:         CO:         Q:         ***           Measurement methods         NDIR         NDIR         NDIR         NDIR         NDIR         Magete presentation detect           Range*2         Standard         200-5000 ppm         200-5000 ppm         100 ppm-         —         =         Mithin a factor of 10         Within 50         Scale         …         1.0% of full scale/week (within standard range, with standard gas formation)         Distingetation         …         1.0% of full scale/week (within standard range, with standard gas formation)         Distingetation         …         1.0% of caway from direct sunlight and radiation heat) *4         Engenatue		cificatio	5115					
Measurement methods         NDIR         NDIR         NDIR         NDIR         Magnet-preuntic dated           Range®         Standard         200-5000 ppm         200-5000 ppm         5-25 vol%         10-25 vol%           Range Ratio         Within a factor of 10         Within a factor of 10         Within a factor of 20         Within a factor of 5         Within a factor of 5         Within a factor of 10         Within a factor of 10         Within a factor of 5         Within a factor of 5         Within a factor of 10         Within 0.5% of full scale (assuming surrounding temperature is maintained within 5°C) (with optional range, or 0.7 measurement, ± 2.0% of full scale)         Span drift         ± 2.0% of full scale/week (assuming surrounding temperature is maintained within 5°C) (with optional range, or 0.2 measurement, ± 2.0% of full scale/week (within standard range, with standard gas formation)           Display         Temperature         -5 to 40°C (away from direct sunlight and radiation heat) *4           Humidity         85% or less (no condensation)         Within 0.5 cond full scale/week (within standard range, with standard gas formation)           Display         Temperature         -5 to 40°C (away from direct sunlight and radiation heat) *4           Humidity         85% or less (no condensation)         Within 30 sconds fir 5.00 ro for lower           Bust         Standard environment	Model							
Range*©Standard200-5000 ppm200-5000 ppm50 ppm-100 ppm-10-25 vol%10-25 vol%Range RatioWithin a factor 010Within a factor 010Within a factor 010Within a factor 010Within a factor 010RepeatabilityWithin 0.5% of full scale (with optional range, or during 0: measurement, ± 1.0% of full scale10-25 vol%10-25 vol%Zero drift $\pm 1.0\%$ of full scale (assuming surrounding temperature is maintained within 5°)within 0.5% of full scale/week (assuming surrounding temperature is maintained within 5°)Response time *3Within 0.6% of full scale/week (dassuming surrounding temperature is maintained within 5°)Response time *3 $\pm 2.0\%$ of full scale/week (dassuming surrounding temperature is maintained within 5°)Response time *3 $\pm 2.0\%$ of full scale/week (within standard range, with standard gas formation)DisplayTouch panel LCD (backlight) (four usable lines)Imperature $-5$ to 40° C (away from direct sunlight and radiation heat ) *4Humidity85% or less (no condensation)ContinueUbration100 Hz, 0.3 m/S' or lessDust0.1 g/Nm' or lessSandargasNo.500 ppm or less: NO2: 15p ppm or less: SO2: 1000 ppm or less: SO2: 500 ppm or less: CO2: 10% volume or less: HaO: 40% ovlume or lessSampling methodDry sampling using an electric coolerSample gas flow $2.5 Lmin-3.0 Lmin$ Sample gas pressure $\pm 4.9$ kPa (three points selected)(1) 1-9 fo 10 4.9 kPa(2) ± 3.43 kPa(2) ± 3.43 kPa(2) ± 3.43 kPa(2) ± 3.43 kPa(2	Component		NOx	SO <sub>2</sub>	СО	CO <sub>2</sub>	O2 *1	
Optional         100 ppm-         50 ppm-         100 ppm-         —         —         —           Range Ratio         Within a factor of 10         Science           Repeatability         Within 0.5% of full scale (with optional range, or during 0: measurement, ± 2.0% of full scale)         ± 1.0% of full scale (assuming surrounding temperature is maintained within 5°C) (with optional range, or 0: measurement, ± 2.0% of full scale)         Scale/week (assuming surrounding temperature is maintained within 5°C) (with obtional range, with standard gas formation)           Deal interestmut assignes         ± 2.0% of full scale/week (within standard range, with standard gas formation)           Display         Touch panel LCD (backlight) (four usable lines)           Temperature         -5 to 40° C (away from direct sunlight and radiation heat) *4           Environment         Ubst         Standard are environment or better           Ust         Standard environment or better         100 Hz, 0.3 m/S' or less           Dust         Ost 0 ppm or less; NO2: 15 ppm or less; SO2: 500 ppm or less; SO2: 50 ppm			NDIR	NDIR	NDIR	NDIR	Magneto-pneumatic detectio	
Range Ratio         Within a factor of 10         Within a factor of 10         Within a factor of 10         Within a factor of 2         Within a factor of 2           Repeatability         Within 0.5% of full scale (with optional range, or during 0: measurement, ± 1.0% of full scale         ± 1.0% of full scale         ± 1.0% of full scale           Zero drift         ± 1.0% of full scale (assuming surrounding temperature is maintained within 5°C) (with optional range, or 0: measurement, ± 2.0% of full scale)         Span drift         ± 2.0% of full scale/week (assuming surrounding temperature is maintained within 5°C) (with optional range, or 0: measurement, ± 2.0% of full scale)           Span drift         ± 2.0% of full scale/week (assuming surrounding temperature is maintained within 5°C) (with optional range, or 0: measurement, ± 2.0% of full scale)           Span drift         ± 2.0% of full scale/week (within standard range, with standard gas formation)           Display         Touch panel LCD (backlight) (four usable lines)           Temperature         -50 40° C (away from direct sunlight and radiation heat) *4           Humidity         85% or less (no condensation)           Dust         O1 g/Nm* or less           Dust         0.1 g/Nm* or less           Sampling method         Dry sampling using an electric cooler           Sample gas flow         2.5 Urnin - 3.0 Urnin           Sample gas pressure         ± 4.9 kPa (three points selected)         (1) -1.96 to 4.9 kPa <td>Range*2</td> <td>Standard</td> <td>200~5000 ppm</td> <td>200~5000 ppm</td> <td>200~5000 ppm</td> <td>5~25 vol%</td> <td>10~25 vol%</td>	Range*2	Standard	200~5000 ppm	200~5000 ppm	200~5000 ppm	5~25 vol%	10~25 vol%	
Repeatability         Within 0.5% of full scale (with optional range, or during 0, measurement, ±1.0% of full scale           Zero drift         ±1.0% of full scale (assuming surrounding temperature is maintained within 5°C) (with optional range, or 0, measurement, ± 2.0% of full scale)           Span drift         ±2.0% of full scale/week (assuming surrounding temperature is maintained within 5°C) (with optional range, or 0, measurement, ± 2.0% of full scale)           Response time *3         Within 0 seconds (Id + 170 fm equipment intake area) (sample flow 0.6 Lmin) (within 240 seconds for S0, or)           Display         Touch panel LCD (backlight) (four usable lines)           Imperature         -5 to 40° C (away from direct sunlight and radiation heat) *4           Humidity         S5% or less           Dust         Standard environment or better           Temperature         250°C or lower           Dust         0.1 g/Nm" or less           Sample gas flow         2.5 L/min - 3.0 L/min           Sample gas flow         2.5 L/min - 3.0 L/min           Sample gas pressure         ± 4.9 kPa (three points selected) (with no sample gas back pressure)         (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa           Pressure control         Pressure control         Pressure control uses a regulator and cylinder: Reduced pressure sampling: Control pressure: -4.9 kPa (2) ± 3.23 kPa (3) -4.9 to 1.96 kPa           Cerrecton         Pressure control usesa regulator and cylinde		Optional	100 ppm~	50 ppm~	100 ppm~	_	—	
Linearly (indicator error)       ± 1.0% of full scale         Zero drift       ± 1.0% of full scale (assuming surrounding temperature is maintained within 5°C) (with optional range, or 0.2 measurement, ± 2.0% of full scale)         Span drift       ± 2.0% of full scale/week (assuming surrounding temperature is maintained within 5°)         Response time       *3         Within 60 seconds (Td + 190 from equipment intake area) (sample flow 0.6 L/min), (within 240 seconds for S0- only breat interention obstig)         Display       ± 2.0% of full scale/week (within standard range, with standard gas formation)         Display       Temperature         -5 to 40° C (away from direct sunlight and radiation heat) *4         Humidity       85% or less (no condensation)         Vibration       100 Hz, 0.3 m/S' or less         Dust       0.1 g/Nm' or less         Measung       0.1 g/Nm' or less: SO: 500 ppm or less; NO: 500 ppm or less; NO: 15% volume or less; Ho: 40% volume or less         Sampling method       Dry sampling using an electric cooler         Sample gas flow       2.5 L/min - 3.0 L/min         Sample gas flow       1.2 L/min - 3.0 L/min         Sample gas pressure       ± 4.9 kPa (three points selected)         (with no sample gas back pressure)       (1) -1.96 kPa         Pressure control uses a regulator and cyclinder: Reduced pressure anpling: Control pressure: 4.9 kP         Output	Range R	atio	Within a factor of 10	Within a factor of 10	Within a factor of 10	Within a factor of 5	Within a factor of 2.5	
Zero drift       ± 1.0% of full scale (assuming surrounding temperature is maintained within 5°C) (with optional range, or O2 measurement, ± 2.0% of full scale)         Span drift       ± 2.0% of full scale/week (assuming surrounding temperature is maintained within 5°C) (with optional range, or O2 measurement, ± 2.0% of full scale)         Span drift       ± 2.0% of full scale/week (assuming surrounding temperature is maintained within 5°C) of full scale/week (within standard range, with standard gas formation)         Display       Touch panel LCD (backlight) (four usable lines)         Temperature       -5 to 40° C (away from direct sunlight and radiation heat) *4         Humidity       85% or less (no condensation)         Vibration       100 Hz, 0.3 m/S' or less         Dust       Standard environment or better         Measuing control       0.1 g/Nm <sup>3</sup> or less         Sampling method       Dry sampling using an electric cooler         Sample gas flow       2.5 L/min-3.0 L/min         Sample gas pressure       ± 4.9 kPa (three points selected)         (2) ± 3.43 kPa       (3) 4.9 to 1.96 kPa         Pressure control       Pressure control uses a regulator and cylinder: Reduced pressure sampling: Control pressure: 4.9 kPa         Correction method       Dy correction, automatic correction cycle: 7 days standard, can be adjusted to betwent and dy days), manual correction for method         Output       Co ta 0A (absolute output) (CC to 16 m/XC C to 1 VID	Repeata	bility	Within 0.5% of fu	Il scale (with optiona	al range, or during (	D2 measurement, ±	1.0% of full scale)	
Zero drift       (with optional range, or O₂ measurement, ± 2.0% of full scale)         Span drift       ± 2.0% of full scale/week (assuming surrounding temperature is maintained within 5?)         Response time       Within 60 seconds (Td + 190 form equipment intake area) (sample flow 0.6 L/min.) (within 240 seconds for SO. only intermediating is ± 2.0% of full scale/week (within standard range, with standard gas formation)         Display       Touch panel LCD (backlight) (four usable lines)         Itemperature       -5 to 40° C (away from direct sunlight and radiation heat) **         Humidity       85% or less (no condensation)         Dust       Standard environment or better         Dust       Ol g/Nm² or less         Standard gas       NO: 500 ppm or less: NO2: 15 ppm or less; SO2: 1000 ppm or less; SO2: 50 ppm or less         Contion       Standard gas         Sample gas flow       2.5 L/min-3.0 L/min         Sample gas flow       2.5 L/min-3.0 L/min         Sample gas pressure       ± 4.9 kPa (three points selected) (2) ± 3.43 kPa (2) 4.0% volume or less: A 9 kPa (2) 4.0% volume or less istance load         Correction       Pressure control uses a regulator and cylinder: Reduced pressure sampling: Control pressure: 4.9 kPA (three points selected) (2) ± 3.43 kPa (2) 4.0% volume or less istance load         Correction       Pressure control uses a regulator and cylinder: Reduced pressure sampling: Control pressure: 4.9 kPA (by corection, submains swrinings, range display, correction	Linearity (in	dicator error)			± 1.0% of full scal	e		
Response time       **       Within 60 seconds (Td + T90 from equipment intake area) (sample flow 6. L/min.) (within 240 seconds for S0. of 0 beat interest time outsing as:       ± 2.0% of full scale/week (within standard range, with standard gas formation)         Display       Touch panel LCD (backlight) (four usable lines)       ***         Temperature      5 to 40° C (away from direct sunlight and radiation heat) ***       ***         Humidity       85% or less (no condensation)       00 Hz, 0.3 m/S° or less         Dust       Standard environment or better         Resuring       Dust       0.1 g/Nm* or less:         Standard gas condition       NO: 500 ppm or less; NO2: 15 ppm or less; SO2: 1000 ppm or less; SO3: 50 ppm or less:         Sampling method       Dry sampling using an electric cooler         Sample gas flow       2.5 L/min-3.0 L/min         Sample gas pressure       ± 4.9 kPa (three points selected) (with no sample gas back pressure)       (1) -1.96 to 4.9 kPa (3) -4.9 kD2 (1) 0.00 h Acc 250 V 1 A resistance load         Correction method       Dry correction, automatic correction (correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correction correction; correction method authorization: No or ambient air can be use flow correction; sample gas flaw (4) 170 (H) × 300 (D) mm (high pressure gas oglinders, 3.4 L cylinders, maximum d3 cylinders), About 180 kg (not including cylin	Zero drif	İ						
No. 500 pm of Lass (No. 1: 00 data capacity) <ul> <li>± 2.0% of full scale/week (within standard range, with standard gas formation)</li> <li>Display</li> <li>Temperature</li> <li>-5 to 40° C (away from direct sunlight and radiation heat)</li> <li>*4</li> </ul> Environment         Humid U         85% or less (no condensation)           Other the standard environment or better           Humid U         0.1 g/Nm <sup>2</sup> or less           Dust         Standard environment or better           Temperature         250°C or lower           Dust         0.1 g/Nm <sup>2</sup> or less           Standard gas         NO: 500 ppm or less; NO:: 15 ppm or less; SO:: 1000 ppm or less; SO:: 50 ppm or less           Sample gas flow         2.5 L/min - 3.0 L/min           Sample gas flow         2.5 L/min - 3.0 L/min           Sample gas pressure         (with no sample gas back pressure)         (1) - 1.96 to 4.9 kPa           (with no sample gas back pressure)         (2) ± 3.43 kPa         (3) -4.9 to 1.96 kPa           Pressure control         Pressure control uses a regulator and cylinder: Reduced pressure sampling. Control pressure: 4.9 kP         Output         DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system         Analysis alerts, analysis warrings, range display. corrections, conservation, purging (optio	Span drif	ft	± 2.0% of full s	cale/week (assumi	ing surrounding te	mperature is main	tained within 5°)	
Display         Touch panel LCD (backlight) (four usable lines)           Temperature         -5 to 40° C (away from direct sunlight and radiation heat) *4           Humidity         85% or less (no condensation)           Vibration         100 Hz, 0.3 m/S' or less           Dust         Standard environment or better           Temperature         250°C or lower           Dust         0.1 g/Nm' or less           Sandard gas         NO: 500 ppm or less; ND:: 15 ppm or less; SD:: 1000 ppm or less; SD:: 50 ppm or less           Sampling method         Dry sampling using an electric cooler           Sample gas flow         2.5 L/min-3.0 L/min           Sample gas pressure         ± 4.9 kPa (three points selected) (with no sample gas back pressure)         (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa           Pressure control         Pressure control uses a regulator and cylinder: Reduced pressure sampling. Control pressure: 4.9 kP Output         DC 4 to 20 mA (absolute output) (DC 0 to 16 m/DC 0 to 17/DC 1 to 5V optional) Max. 12 output system           External output         Analysis alerts, analysis warnings, range display, corrections, conservation, purging (optior Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Correction method         Dry correction, automatic correction (correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correditor Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistandce load           Probe collection<	Respons	e time *3	Within 60 seconds (T	d + T90 from equipment	intake area) (sample flo	w 0.6 L/min.) (within 240	seconds for SO2 only	
Temperature         -5 to 40° C (away from direct sunlight and radiation heat ) *4           Humidity         85% or less (no condensation)           Vibration         100 Hz, 0.3 m/5° or less           Dust         Standard environment or better           Temperature         250°C or lower           Dust         0.1 g/Nm° or less           Standard gas composition*         NO: 500 ppm or less; NO2: 15 ppm or less; SO2: 1000 ppm or less; SO3: 50 ppm or less CO: 200 ppm or less; CO2: 15% volume or less; Ho2: 40% volume or less           Sample gas flow         2.5 L/min -3.0 L/min           Sample gas flow         2.5 L/min -3.0 L/min           Sample gas pressure         ± 4.9 kPa (three points selected) (with no sample gas back pressure)         (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa           Pressure control         Pressure control uses a regulator and cylinder: Reduced pressure sampling: Control pressure: -4.9 kP Output         DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system Analysis alerts, analysis warnings, range display, corrections, conservation, purging (optior Contract capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Carrier gas         Carrier gas         Ambient air           Span gas         Gas cylinder for each component measured (when there is no measurement method authorization: Nz or ambient air can be us Probe collection           point filter         Flange: JIS 10K, 40 AFF, Sample probe tube lenght: 1	Overall interference I	from co-existing gases	± 2.0% of f	ull scale/week (with	nin standard range	e, with standard ga	as formation)	
Environment Condition         Humidity         85% or less (no condensation)           Vibration         100 Hz, 0.3 m/5' or less           Dust         Standard environment or better           Measuring Gas Condition         Temperature Dust         0.1 g/Nm' or less; Standard gas composition**         NO: 500 ppm or less; NO2: 15 ppm or less; SO2: 1000 ppm or less; SO3: 50 ppm or less; CO2: 200 ppm or less; CO2: 15% volume or less; Ho2: 40% volume or less           Sample gas flow         2.5 L/min -3.0 L/min           Sample gas flow         2.5 L/min -3.0 L/min           Sample gas pressue         ± 4.9 kPa (three points selected) (with no sample gas back pressure)         (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa           Pressure control         Pressure control uses a regulator and cylinder: Reduced pressure sampling: Control pressure: -4.9 kP Output         DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system Analysis alerts, analysis warnings, range display, corrections, conservation, purging (optior Contract capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Carrier gas         Zero gas         With measurement method authorization: N2. When there is no measurement method authorization: N2 or ambiert air can be usy Probe collection point filter           Probe collection point filter         Flange: JS 10K, 40 AFF; Sample probe tube length: 1000 mm. Material: SUS 316 stainless steel: Flange: JS 10K, 40 AFF; Sample probe tube length: 1000 mm. Material: SUS 316 stainless steel: Flange: JS 10K, 40 AFF; Sample probe tube length: 1000 mm.	Display			Touch panel L	.CD (backlight) (fo	ur usable lines)		
Environment Condition         Humidity         85% or less (no condensation)           Vibration         100 Hz, 0.3 m/5' or less           Dust         Standard environment or better           Measuring Gas Condition         Temperature Dust         0.1 g/Nm' or less; Standard gas composition**         NO: 500 ppm or less; NO2: 15 ppm or less; SO2: 1000 ppm or less; SO3: 50 ppm or less; CO2: 200 ppm or less; CO2: 15% volume or less; Ho2: 40% volume or less           Sample gas flow         2.5 L/min -3.0 L/min           Sample gas flow         2.5 L/min -3.0 L/min           Sample gas pressue         ± 4.9 kPa (three points selected) (with no sample gas back pressure)         (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa           Pressure control         Pressure control uses a regulator and cylinder: Reduced pressure sampling: Control pressure: -4.9 kP Output         DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system Analysis alerts, analysis warnings, range display, corrections, conservation, purging (optior Contract capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Carrier gas         Zero gas         With measurement method authorization: N2. When there is no measurement method authorization: N2 or ambiert air can be usy Probe collection point filter           Probe collection point filter         Flange: JS 10K, 40 AFF; Sample probe tube length: 1000 mm. Material: SUS 316 stainless steel: Flange: JS 10K, 40 AFF; Sample probe tube length: 1000 mm. Material: SUS 316 stainless steel: Flange: JS 10K, 40 AFF; Sample probe tube length: 1000 mm.		Temperature		5 to 40° C (away fi	rom direct sunlight	and radiation hea	nt)*4	
Condition         Vibration         100 Hz, 0.3 m/S² or less           Dust         Standard environment or better           Temperature         250°C or lower           Dust         0.1 g/Nm³ or less           Condition         Standard gas composition*s         NO: 500 ppm or less: NO2: 15 ppm or less: SO2: 1000 ppm or less: SO2: 50 ppm or less           Sample gas flow	Environment	Humidity						
Temperature         250°C or lower           Dust         0.1 g/Nm³ or less           Standard gas composition #5         NO: 500 ppm or less; NO2: 15% volume or less; SO2: 40% volume or less; CO: 200 ppm or less; CO2: 15% volume or less; H20: 40% volume or less           Sample gas flow         2.5 L/min - 3.0 L/min           Sample gas flow         2.5 L/min - 3.0 L/min           Sample gas pressure         ± 4.9 kPa (three points selected) (with no sample gas back pressure)         (1) -1.96 to 4.9 kPa (3) -4.9 to 1.96 kPa           Pressure control         Pressure control uses a regulator and cylinder; Reduced pressure sampling; Control pressure: -4.9 kP (3) -4.9 to 1.96 kPa           Pressure control         DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Correction method         Dry correction, automatic correction (correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correct Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Calibration gas         Zero gas (With measurement method authorization: Nz, When there is no measurement method authorization: Nz or ambient air can be use Probe collection           point filter         Filter element: SUS-304 stainless steel and 2µm-pleated quart wool; Electric heater: 100 VA, with water droplet prod case Power sopply           Power sopply         AC 100 V ± 15 V(85 V - 115 V)           Power onsymption         About 800 VA (heated pipin	Condition	Vibration		10	0 Hz, 0.3 m/S <sup>2</sup> or I	ess		
Dust         0.1 g/Nm³ or less           Standard gas composition **         NO: 500 ppm or less; NO2: 15 ppm or less; SO2: 1000 ppm or less; SO3: 50 ppm or less; CO: 200 ppm or less; CO2: 15% volume or less; H2O: 40% volume or less           Sample gas flow         2.5 L/min-3.0 L/min           Sample gas flow         2.5 L/min-3.0 L/min           Sample gas pressure         ± 4.9 kPa (three points selected) (with no sample gas back pressure)         (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 to 4.9 kPa           Pressure control         Pressure control uses a regulator and cylinder; Reduced pressure sampling: Control pressure: -4.9 kP           Output         DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system           External output         Analysis alerts, analysis warnings, range display, corrections, conservation, purging (optior Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Calibration gas         Qo carrier gas         Ambient air           Span gas         Gas oylind for each component measured (when there is no measurement method authorization: Nz or ambient air Span gas         Gas oylinder for each component measured (when there is no measurement method authorization: Nz or ambient air Span gas           Power sopply         AC 100 V ± 15 V(85 V-115 V)         Power frequency           Power frequency         SO/60 Hz (switchable)         SUS-316 stainless steel, SUS-304 stainless steel, To10 vA; heater in tray: +300 VA)           Exte		Dust		Stand	ard environment o	r better		
Case         Dust         Dist         Dist           Standard gas Condition         NO: 500 ppm or less; NO2: 15 ppm or less; SO2: 1000 ppm or less; SO3: 50 ppm or less; CO: 200 ppm or less; CO2: 15% volume or less; HaD: 40% volume or less           Sample gas flow         2.5 L/min~3.0 L/min           Sample gas flow         2.5 L/min~3.0 L/min           Sample gas pressure         ± 4.9 kPa (three points selected) (with no sample gas back pressure)         (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa           Pressure control         Pressure control uses a regulator and cylinder; Reduced pressure sampling: Control pressure: -4.9 kP           Output         DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system           External output         Analysis alerts, analysis warnings, range display, corrections, conservation, purging (option Contact capacity): DC 30 V 1 A, AC 250 V 1 A resistance load           Carrection method         Dry correction, correction (correction cyde: 7 days standard, can be adjusted to between 1 and 99 days), manual correction correction correction (correction cyde: 7 days standard, can be adjusted to between 1 and 99 days), manual correction correction method           Carrier gas         With measurement method authorization: Nz, When there is no measurement method authorization. Nz or ambient air can be use           Probe collection point filter         Flange: JIS 10K, 40 AFF: Sample probe tube length: 1000 mm: Material: SUS-316 stainless stee! Filter element: SUS-304 stainless stee! and 2µm-pleated quartz wooi: Elect		Temperature			250°C or lower			
Standard gas composition #S         NO: 500 ppm or less; NO2: 15 ppm or less; SO2: 1000 ppm or less; SO2: 50 ppm or less; CO: 200 ppm or less; CO2: 15% volume or less; H2O: 40% volume or less; Sample gas flow           Sample gas flow         2.5 L/min-3.0 L/min           Sample gas flow         2.5 L/min-3.0 L/min           Sample gas pressure         ± 4.9 kPa (three points selected) (with no sample gas back pressure)         (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa           Pressure control         Pressure control uses a regulator and cylinder; Reduced pressure sampling: Control pressure: -4.9 kP           Output         DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to SV optional) Max. 12 output system           External output         Analysis alerts, analysis warnings, range display, corrections, conservation, purging (option Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Correction method         Dry correction, automatic correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correct Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Correctorin method         Dry carreing as cylinder for each component measured (when there is no measurement method authorization: Nz or ambient air Span gas           Calibration gas         Gas cylinder for each component measured (when there is no measurement method authorization: 0x or ambient air can be use Probe collection point filter           Filter element: SUS-304 stainless steel and 2µm-pleated quarz wook; Electric heater: 100 VA, with water droplet proof case Power sopply	Measuring	Dust			0.1 g/Nm <sup>3</sup> or less	;		
Sample gas flow       2.5 L/min~3.0 L/min         Sample inlet tube       Teflon tubing (ø8/ø6 mm)         Sample gas pressure       ± 4.9 kPa (three points selected) (with no sample gas back pressure)       (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa         Pressure control       Pressure control uses a regulator and cylinder; Reduced pressure sampling: Control pressure: -4.9 kP         Output       DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system         External output       Analysis alerts, analysis warnings, range display, corrections, conservation, purging (option Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load         Correction method       Dry correction, automatic correction (correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correction contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load         Calibration gas       Zero gas       With measurement method authorization: Nz. When there is no measurement method authorization: Nz or ambient air Span gas [Gas cylinder for each component measured (when there is no measurement method authorization: 0 or ambient air can be use Flange: JIS 10K, 40 AFF: Sample probe tube length: 1000 mm: Material: SUS-316 stainless steel: Filter element: SUS-304 stainless steel and 2µm-pleated quarz wook: Electric heater: 100 VA, with water droplet proof case Power sopply         Power consumption       About 800 VA (heated piping 30m: + 1100 VA; heater in tray: + 300 VA)         Exterior dimensions       600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of	Gas Condition	Standard gas composition *5		NO: 500 ppm or less; NO2: 15 ppm or less; SO2: 1000 ppm or less; SO3: 50 ppm or less;				
Sample gas flow       2.5 L/min~3.0 L/min         Sample inlet tube       Teflon tubing (ø8/ø6 mm)         Sample gas pressure       ± 4.9 kPa (three points selected) (with no sample gas back pressure)       (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa         Pressure control       Pressure control uses a regulator and cylinder; Reduced pressure sampling: Control pressure: -4.9 kP         Output       DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system         External output       Analysis alerts, analysis warnings, range display, corrections, conservation, purging (option Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load         Correction method       Dry correction, automatic correction (correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correction contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load         Calibration gas       Zero gas       With measurement method authorization: Nz. When there is no measurement method authorization: Nz or ambient air Span gas [Gas cylinder for each component measured (when there is no measurement method authorization: 0 or ambient air can be use Flange: JIS 10K, 40 AFF: Sample probe tube length: 1000 mm: Material: SUS-316 stainless steel: Filter element: SUS-304 stainless steel and 2µm-pleated quarz wook: Electric heater: 100 VA, with water droplet proof case Power sopply         Power consumption       About 800 VA (heated piping 30m: + 1100 VA; heater in tray: + 300 VA)         Exterior dimensions       600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of	Sampling	method		Drv sam	olina usina an elec	tric cooler		
Sample inlet tube       Teflon tubing (ø8/ø6 mm)         Sample gas pressure       ± 4.9 kPa (three points selected) (with no sample gas back pressure)       (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa         Pressure control       Pressure control uses a regulator and cylinder; Reduced pressure sampling: Control pressure: -4.9 kP         Output       DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system         External output       Analysis alerts, analysis warnings, range display, corrections, conservation, purging (optior Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load         Carrection method       Dry correction, automatic correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correct Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load         Calibration gas       Zero gas       With measurement method authorization: Nz, When there is no measurement method authorization: Nz or ambient at Coalibration gas         Probe collection point filter       Flange: JIS 10K, 40 AFF; Sample probe tube length: 1000 mm: Material: SUS-316 stainless steel; Filter element: SUS-304 stainless steel and 2µm-pleated quarz wook; Electric heater: 100 VA, with water droplet proof case         Power frequency       50/60 Hz (switchable)         Power consumption       About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)         600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, maximum of 3 cylinders), About 200 kg (not including cylinder Materials in contract with sample gas       SUS-316 st		<i>.</i>			<u> </u>			
Sample gas pressure       ± 4.9 kPa (three points selected) (with no sample gas back pressure)       (1) -1.96 to 4.9 kPa (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa         Pressure control       Pressure control uses a regulator and cylinder; Reduced pressure sampling: Control pressure: .4.9 kP         Output       DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to SV optional) Max. 12 output system         Analysis alerts, analysis warnings, range display, corrections, conservation, purging (optior Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load         Correction method       Dry correction, automatic correction (correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correction Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load         Calibration gas       Zero gas       With measurement method authorization: Nz, When there is no measurement method authorization: Nz or ambient at Co carrier gas         Probe collection point filter       Flange: JIS 10K, 40 AFF; Sample probe tube length: 1000 mm; Material: SUS-316 stainless steel; Filter element: SUS-304 stainless steel and 2µm-pleated quarz wook; Electric heater: 100 VA, with water droplet proof case         Power frequency       SO/60 Hz (switchable)         Power frequency       About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)         dot (w) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, maximum of 3 cylinders), About 30 kg (not including cylinder with sample gas       SUS-316 stainless steel, SUS-304 stainless steel, Teffon, polypropylene, polyethylene, flourorubber, PVC, PVDF, and glass		, 						
Sample gas pressure              £4.9 kPa (Infree points selected) (with no sample gas back pressure)             (2) ± 3.43 kPa (3) -4.9 to 1.96 kPa          Pressure control       Pressure control uses a regulator and cylinder; Reduced pressure sampling; Control pressure: -4.9 kP             (3) -4.9 to 1.96 kPa          Pressure control       DC 4 to 20 mA (absolute output) (DC 0 to 10 fm A/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system          External output       Analysis alerts, analysis warnings, range display, corrections, conservation, purging (optior             Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load          Correction method       Dy correction, automatic correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correction          Calibration gas       Zero gas       With measurement method authorization: N/, When there is no measurement method authorization: N/ or ambient air          Calibration gas       Oz carrier gas       Ambient air          Span gas       Gas oylinder for each component measured (when there is no measurement method authorization: N/ or ambient air can be use          Probe collection             point filter       Flange: JIS 10K, 40 AFF; Sample probe tube length: 1000 mm; Material: SUS-316 stainless steel;             Filter element: SUS-304 stainless steel and 2µm-pleated quart wool; Electric heater: 100 VA, with water droplet proof case          Power frequency       AD 0100 V (heated piping 300m; +11100 VA; heater in tray: +300 VA) <td></td> <td></td> <td></td> <td></td> <td>(1)</td> <td>-1.96 to 4.9 kPa</td> <td></td>					(1)	-1.96 to 4.9 kPa		
(With the sample gas back pressure)         (3) -4.9 to 1.96 kPa           Pressure control         Pressure control uses a regulator and cylinder; Reduced pressure sampling: Control pressure: -4.9 kP           Output         DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system           External output         Analysis alerts, analysis warnings, range display, corrections, conservation, purging (optior Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Correction method         Dry correction, automatic correction (correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correction           Calibration gas         Qz carrier gas           O2 carrier gas         Ambient air           Span ga's         Gas oylinder for each component measured (when there is no measurement method authorization: Nz or ambient air can be use           Probe collection point filter         Filter element: SUS-304 stainless steel and 2µm-pleated quartz wool: Electric heater: 100 VA, with water droplet proof case           Power sopply         AC 100 V ± 15 V(85 V-115 V)           Power frequency         50/60 Hz (switchable)           Power songultation         About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)           Exterior dimensions dot(W) × 170 (H) × 300 (D) mm (high pressure gas cylinders, maximum of 3 cylinders). About 200 (g (no including cylinder for all stainless steel, SUS-316 stainless steel, SUS-316 stainless steel, SUS-316 stainless steel, SUS-304 stainless steel, Teflo	Sample and proceure			4.9 kPa (three points selected) $(2) + 2.42$ kPa				
Output         DC 4 to 20 mA (absolute output) (DC 0 to 16 mA/DC 0 to 1 V/DC 1 to 5V optional) Max. 12 output system           External output         Analysis alerts, analysis warnings, range display, corrections, conservation, purging (option Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Correction method         Dry correction, automatic correction (correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correction           Calibration gas         Zero gas         With measurement method authorization: Nz When there is no measurement method authorization: Nz or ambient air           Span gas         Gas cylinder for each component measured (when there is no measurement method authorization: 0z or ambient air can be use           Probe collection point filter         Flange: JIS 10K, 40 AFF; Sample probe tube length: 1000 mm; Material: SUS-316 stainless steel;           Power sopply         AC 100 V ± 15 V(85 V~115 V)           Power frequency         SO/60 Hz (switchable)           Power consumption         About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)           Exterior dimensions         600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder four including cylinder four including cylinder, maximum of 3 cylinders); About 200 kg (not including cylinder four consumption           About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)         SUS-316 stainless steel, SUS-304 stainless steel, Teflon, polypropylene, polyethylene, four orrubber, PVC, PVDF, an			(With no sample das pack pressure) I					
External output         Analysis alerts, analysis warnings, range display, corrections, conservation, purging (option Contact capacity: DC 30 V 1 A, AC 250 V 1 A resistance load           Correction method         Dry correction, automatic correction (correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correction Calibration gas         Zero gas         With measurement method authorization: Nz When there is no measurement method authorization: Nz or ambient air Span gas         Gas cylinder for each component measured (when there is no measurement method authorization: 0z or ambient air can be use Probe collection point filter         Filter element: SUS-304 stainless steel and 2µm-pleated quartz wool; Electric heater: 100 VA, with water droplet proof case Power sopply         A 100 V ± 15 V (85 V~115 V)           Power frequency         50/60 Hz (switchable)         Sustainless steel, 100 VA; heater in tray: +300 VA)         Exterior dimensions 600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) x 1770 (H) x 300 (D) mm (high pressure	Pressure control		Pressure control uses a regulator and cylinder; Reduced pressure sampling; Control pressure: -4.9 kPa					
External output         Confact capacity: DC 30 V 1 Å, ÅC 250 V 1 Å resistance load           Correction method         Dry correction, automatic correction (correction cycle: 7 days standard, can be adjusted to between 1 and 99 days), manual correction           Calibration gas         Zero gas         With measurement method authorization: Nz when there is no measurement method authorization: Nz or ambient air           Calibration gas         Do carrier gas         Ambient air           Span gas         Gas cylinder for each component measured (when there is no measurement method authorization: 0z or ambient air can be use           Probe collection         Flange: JIS 10K, 40 AFF: Sample probe tube length: 1000 mm: Material: SUS-316 stainless steel;           Filter element: SUS-304 stainless steel and 2µm-pleated quartz wool; Electric heater: 100 VA, with water droplet proof case           Power sopply         AC 100 V ± 15 V(85 V~115 V)           Power frequency         50/60 Hz (switchable)           Power consumption         About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)           Exterior dimensions         600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder four including cylinder sy. About 200 kg (not including cylinder sy. About 2	Output		DC 4 to 20 mA (abs	solute output) (DC 0 to	16 mA/DC 0 to 1 V/D0	C 1 to 5V optional) Ma	x. 12 output systems	
Zero gas         With measurement method authorization: N2, When there is no measurement method authorization: N2 or ambient at O2 carrier gas           Calibration gas         O2 carrier gas         Ambient air           Span gas         Gas cylinder for each component measured (when there is no measurement method authorization: 02 or ambient air can be use Probe collection point filter         Flange: JIS 10K, 40 AFF; Sample probe tube length: 1000 mm; Material: SUS-316 stainless steel; Filter element: SUS-304 stainless steel and 2µm-pleated quartz wool; Electric heater: 100 VA, with water droplet proof case Power sopply           Power frequency         SO/60 Hz (switchable)           Power consumption         About 800 VA (heated piping 30m; +1100 VA; heater in tray: +300 VA)           Exterior dimensions 600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34.1 cylinders, maximum of 3 cylinders), About 80 g (not including cylinder flourorubber, PVC, PVDF, and glass           Materials in contract with sample gas         SUS-316 stainless steel, SUS-304 stainless steel, Teflon, polypropylene, polyethylene, flourorubber, PVC, PVDF, and glass           Enclosure         Plate thickness. Main unit, doors, top plate, steel plate: 2.3 mm; Channel base: 3.2 mm; Doors; front opening: Interface: right fr	External	output						
Calibration gas         Dz carrier gas         Ambient air           Span gas         Gas cylinder for each component measured (when there is no measurement method authorization: 02 or ambient air can be use probe collection point filter         Flange: JIS 10K, 40 AFF; Sample probe tube length: 1000 mm; Material: SUS-316 stainless steel; Filter element: SUS-304 stainless steel and 2µm-pleated quartz wool; Electric heater: 100 VA, with water droplet proof case           Power sopply         AC 100 V ± 15 V(85 V-115 V)           Power frequency         50/60 Hz (switchable)           Power onsumption         About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)           Exterior dimensions 600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34.L cylinders, maximum of 3 cylinders); About 180 kg (not including cylinder dio (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, sat.L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder dio (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, sat.L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder dio (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, sat.L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder dis cylinders); About 200 kg (not including cylinder flourorubber, PVC, PVDF, and glass           Enclosure         Independent outdoor installation Plate thickness: Main unit, doors, top plate, steel plate: 2.3 mm; Channel base: 3.2 mm; Doors; front opening: Interface: right fro	Correctio	n method	Dry correction, automatic	correction (correction cycle	7 days standard, can be a	djusted to between 1 and 9	9 days), manual correction	
Calibration gas         Dz carrier gas         Ambient air           Span gas         Gas cylinder for each component measured (when there is no measurement method authorization: 02 or ambient air can be use probe collection point filter         Flange: JIS 10K, 40 AFF; Sample probe tube length: 1000 mm; Material: SUS-316 stainless steel; Filter element: SUS-304 stainless steel and 2µm-pleated quartz wool; Electric heater: 100 VA, with water droplet proof case           Power sopply         AC 100 V ± 15 V(85 V-115 V)           Power frequency         50/60 Hz (switchable)           Power onsumption         About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)           Exterior dimensions 600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34.L cylinders, maximum of 3 cylinders); About 180 kg (not including cylinder dio (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, sat.L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder dio (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, sat.L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder dio (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, sat.L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder dis cylinders); About 200 kg (not including cylinder flourorubber, PVC, PVDF, and glass           Enclosure         Independent outdoor installation Plate thickness: Main unit, doors, top plate, steel plate: 2.3 mm; Channel base: 3.2 mm; Doors; front opening: Interface: right fro			Zero gas With m	easurement method authoriz	ation: N2. When there is no	measurement method auth	prization: N2 or ambient air	
Span gas         Gas cylinder for each component measured (when there is no measurement method authorization: 0: or ambient air can be use Probe collection point filter         Flange: JIS 10K, 40 AFF; Sample probe tube length: 1000 mm; Material: SUS-316 stainless steel; Filter element: SUS-304 stainless steel and 2µm-pleated quartz wool; Electric heater: 100 VA, with water droplet proof case           Power sopply         AC 100 V ± 15 V(85 V-115 V)           Power frequency         50/60 Hz (swittchable)           Power consumption         About 800 VA (heated piping 30m: + 1100 VA; heater in tray: + 300 VA)           Exterior dimensions 600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of 3 cylinders); About 800 kg (not including cylinder 400 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 34 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 400 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 400 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 400 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 400 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 400 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 400 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, aximum of 3 cylinders); About 200 kg (not including cylinder 400 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 400 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, maximum of 3 cyli	Calibratio	on gas						
Probe collection point filter         Flange: JIS 10K, 40 AFF; Sample probe tube length: 1000 mm; Material: SUS-316 stainless steel; Filter element: SUS-304 stainless steel and 2µm-pleated quartz wool; Electric heater: 100 VA, with water droplet proof case           Power sopply         AC 100 V ± 15 V(85 V-115 V)           Power frequency         50/60 Hz (switchable)           Power consumption         About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)           Exterior dimensions (400 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 180 kg (not including cylinder dou (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder dou (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder dou (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, and L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder dou (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, and L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder dou (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, and L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder dou (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, and the syntheses, maximum of 3 cylinders); About 200 kg (not including cylinder dou (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, and the syntheses, maximum of 3 cylinders); About 200 kg (not including cylinder dou (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, and the syntheses, the syntheses, the synthese syntheses, the synthese syntheses, the synthese syntheses, the synthese synthese syntheses, the synthese syntheses, the synthese synthe		5 5			)2 or amhient air can be used			
Power sopply         AC 100 V ± 15 V(85 V-115 V)           Power frequency         50/60 Hz (switchable)           Power consumption         About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)           Exterior dimensions         600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 180 kg (not including cylinder 600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1170 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 2	Probe collection		Flange: JIS 10K, 40 AFF; Sample probe tube length: 1000 mm; Material: SUS-316 stainless steel;					
Power frequency         50/60 Hz (switchable)           Power consumption         About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)           Exterior dimensions         600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 180 kg (not including cylinder (Mass         600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder (Mass           Materials in contract with sample gas         SUS-316 stainless steel, SUS-304 stainless steel, Teflon, polypropylene, polyethylene, flourorubber, PVC, PVDF, and glass           Enclosure         Plate thickness: Main unit, doors, top plate, steel plate: 2.3 mm; Channel base: 3.2 mm; Doors; front opening; Interface: right from	Power so	nnly						
Power consumption         About 800 VA (heated piping 30m: +1100 VA; heater in tray: +300 VA)           Exterior dimensions         600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 180 kg (not including cylinder Mass           Mass         600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 1 Cylinders, 1 Cylinders); About 200 kg (not including cylinders); 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders); 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders); 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders); 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylin		11.5			· · ·	,		
Exterior dimensions         600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 180 kg (not including cylinder Mass           Mass         600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder 600 (W) × 1770 (H) × 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinder Materials in contract with sample gas         SUS-316 stainless steel, SUS-304 stainless steel, Teflon, polypropylene, polyethylene, flourorubber, PVC, PVDF, and glass           Enclosure         Plate thickness: Main unit, doors, top plate, steel plate: 2.3 mm; Channel base: 3.2 mm; Doors: front opening: Interface: right from						300 \/A)		
Image         600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders): About 200 kg (not including cylinder Materials in contract with sample gas         SUS-316 stainless steel, SUS-304 stainless steel, Teflon, polypropylene, polyethylene, flourorubber, PVC, PVDF, and glass           Enclosure         Independent outdoor installation Plate thickness: Main unit, doors, top plate, steel plate: 2.3 mm: Channel base: 3.2 mm: Doors: front opening: Interface: right fro								
with sample gas         flourorubber, PVC, PVDF, and glass           Enclosure         Independent outdoor installation           Plate thickness: Main unit, doors, top plate, steel plate: 2.3 mm: Channel base: 3.2 mm; Doors: front opening: Interface: right fro	/Mass		600 (W) x 1770 (H) x 300 (D) mm (high pressure gas cylinders, 3.4 L cylinders, maximum of 3 cylinders); About 200 kg (not including cylinders					
Enclosure Plate thickness: Main unit, doors, top plate, steel plate: 2.3 mm; Channel base: 3.2 mm; Doors: front opening; Interface: right fro	Materials in contract with sample gas		SUS-316 stainless steel, SUS-304 stainless steel, Teflon, polypropylene, polyethylene, flourorubber, PVC, PVDF, and glass					
Color/Finish Semi-gloss Munsell 5Y7/1 on all inner and outer surfaces				ening; Interface: right from				
	Color/Finish Semi-gloss Munsell 5Y7/1 on all inner and outer surfaces			es				

#### Dimensions (unit: mm)



#### (6-cylinder type)



\*1: No carrier gas cylinder is required.
\*2: Up to two ranges are supported for each component.
\*3: Response time may vary depending on the sampling system composition.
\*4: Support is available for -15 to 40°C (cold-climate version) and 5 to 50°C.

\*5: An NH scrubber is available as an option for cases where a combined gas includes NH<sub>3</sub>. SO<sub>2</sub> measurement corrected for CH<sub>4</sub> interference is available for cases where there is CH<sub>4</sub> in the sample gas for SO<sub>2</sub> measurement. CO measurement corrected for N<sub>2</sub>O interference is available for cases where there is N<sub>2</sub>O in the sample gas for CO measurement.

Horiba continues to contribute to the preservation of the global environment through analysis and measuring technology.

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

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