

燃焼排ガス分析計

# HT-2700



CO<sub>2</sub> Actual measurement by means of CO<sub>2</sub> NDIR bench (option)

Simultaneous measurement up to 6 gas components.

### Sensor selectable

In addition to O<sub>2</sub> (standard equipment), you can select CO, CO Low, CO high, NO, NO Low, NO<sub>2</sub>, SO<sub>2</sub> and CO<sub>2</sub> (NDIR)

### Very light • Compact

Weight about 880g • Size 112×244×54mm  
Portable type

### Super bright color display with LCD backlit

Switchable indication on display, 2 measurement items or 6 measurement items.

### Pressure measurement • Differential pressure measurement

Draft pressure, differential pressure, air pressure, gas pressure and so on.

|  |  |  |                                 |                          |                             |
|--|--|--|---------------------------------|--------------------------|-----------------------------|
| <b>O<sub>2</sub></b><br>Long life<br>0 ~ 21.0 vol% | <b>CO</b><br>H <sub>2</sub> compensation<br>0 ~ 10000ppm | <b>Low CO</b><br>H <sub>2</sub> compensation<br>0 ~ 300ppm | <b>High CO</b><br>0 ~ 10.00vol% | <b>NO</b><br>0 ~ 3000ppm | <b>Low NO</b><br>0 ~ 300ppm |
| <b>NO<sub>2</sub></b><br>0 ~ 500ppm                | <b>SO<sub>2</sub></b><br>0 ~ 4000ppm                     | <b>CO<sub>2</sub></b><br>NDIR<br>0 ~ 20.00vol%             | <b>°C</b><br>0 ~ 650°C          | <b>hPa</b><br>±100hPa    |                             |

|  |   |  |  |                                     |  |   |   |
|--|---|--|--|-------------------------------------|--|---|---|
| <b>O<sub>2</sub></b><br>Long life<br>0 ~ 21.0 vol% | <b>CO</b><br>H <sub>2</sub> Compensation<br>0 ~ 10000ppm<br>HT-2706 | <b>Low CO</b><br>0 ~ 300ppm<br>HT-2725 | <b>High CO</b><br>0 ~ 10.00vol%<br>HT-2723 | <b>NO</b><br>0 ~ 3000ppm<br>HT-2707 | <b>NO<sub>2</sub></b><br>0 ~ 500ppm<br>HT-2708 | <b>SO<sub>2</sub></b><br>0 ~ 4000ppm<br>HT-2722 | <b>CO<sub>2</sub></b><br>NDIR<br>0 ~ 20.00vol%<br>HT-2726 |
|--|---|--|--|-------------------------------------|--|---|---|

O<sub>2</sub>/CO/CO<sub>2</sub>

price ¥ **868,000** (tax exclude)

|                                   |  |                       |                |
|-----------------------------------|--|-----------------------|----------------|
| <b>O<sub>2</sub></b><br>Long life | <b>CO</b><br>H <sub>2</sub> Compensation | <b>CO<sub>2</sub></b> | Sampling probe |
|-----------------------------------|--|-----------------------|----------------|

O<sub>2</sub>/COhigh/CO<sub>2</sub>

Price ¥ **924,000** (tax exclude)

|                                   |                |                       |                |
|-----------------------------------|----------------|-----------------------|----------------|
| <b>O<sub>2</sub></b><br>Long life | <b>High CO</b> | <b>CO<sub>2</sub></b> | Sampling probe |
|-----------------------------------|----------------|-----------------------|----------------|

5 components measurement O<sub>2</sub>/CO/NO/NO<sub>2</sub>/SO<sub>2</sub> Price ¥ **1,153,000** (tax exclude)

|                                   |  |           |                       |                       |                |
|-----------------------------------|--|-----------|-----------------------|-----------------------|----------------|
| <b>O<sub>2</sub></b><br>Long life | <b>CO</b><br>H <sub>2</sub> Compensation | <b>NO</b> | <b>NO<sub>2</sub></b> | <b>SO<sub>2</sub></b> | Sampling probe |
|-----------------------------------|--|-----------|-----------------------|-----------------------|----------------|

6 components measurement O<sub>2</sub>/CO/NO/NO<sub>2</sub>/SO<sub>2</sub>/CO<sub>2</sub> Price ¥ **1,353,000** (tax exclude)

|                                   |  |           |                       |                       |                       |                |
|-----------------------------------|--|-----------|-----------------------|-----------------------|-----------------------|----------------|
| <b>O<sub>2</sub></b><br>Long life | <b>CO</b><br>H <sub>2</sub> Compensation | <b>NO</b> | <b>NO<sub>2</sub></b> | <b>SO<sub>2</sub></b> | <b>CO<sub>2</sub></b> | Sampling probe |
|-----------------------------------|--|-----------|-----------------------|-----------------------|-----------------------|----------------|

HT-2700  
Standard set









- Main unit
- Sampling probe
- Battery charger
- Pressure measurement hose
- Carrying strap
- Test cap
- ABS case
- User manual



Option

Flue gas analyzer  
**HT-2700**



|   |   |  |
|---|---|--|
| IR Printer<br>HT-1610                               |    | Roll paper x 1<br>AAbattery x 4                    |
| Printer paper<br>HT-1636                            |    | 5 rolls  |
| Ambient air<br>temperature sensor<br>HT-2305        |    | 0 ~ 100°C<br>For air temperature                   |
| Measurement Software<br>Online View 2000<br>HT-2074 |   | Recommended OS:<br>Windows XP/7                    |
| Bluetooth module<br>HT-2733                         | Built-in  | Measurement software                               |
| Auto measurement function<br>HT-2746                | Built-in  | Data logging function,<br>user-specific adjustable |
| Flow measurement function<br>HT-2747                | Built-in  | flow velocity measurement by<br>mean of pitot tube |
| Pitot tube HT-3051                                  |  | L=300mm $\phi$ 6mm                                 |
| Pitot tube HT-3052                                  |   | L=500mm $\phi$ 6mm                                 |
| Pitot tube HT-3053                                  |   | L=800mm $\phi$ 6mm                                 |
| Pitot tube HT-3054                                  |   | L=1000mm $\phi$ 8mm                                |
| CO Purge pump<br>HT-2721                            | Built-in  | For protect CO sensor                              |
| Arctic transport bag<br>HT-2790                     |  | 180×320×120mm                                      |
| Draft probe<br>HT-1050B                             |  | L=180mm $\phi$ 5mm<br>Hose length 3000mm           |
| Probe handle<br>HT-7205                             |   | Sampling hose length<br>2700mm                     |
| Probe tube<br>HT-7230                               |  | L=300mm $\phi$ 6mm<br>Flue gas temp. 0 ~ 650°C     |
| Probe tube<br>HT-7235                               |   | L=500mm $\phi$ 6mm<br>Flue gas temp. 0 ~ 650°C     |
| Probe tube<br>HT-7232                               |   | L=750mm $\phi$ 6mm<br>Flue gas temp. 0 ~ 650°C     |
| Probe tube<br>HT-7233                               |   | L=750mm $\phi$ 8mm<br>Flue gas temp. 0 ~ 1100°C    |

# Specification

## Measurement items

|  |                   |   |
|--|-------------------|---|
| O <sub>2</sub><br>Long life                | Measurement range | 0 ~ 21.0vol%  |
|  | Accuracy          | ±0.3vol%  |
|  | Resolution        | 0.1vol%   |
|  | Response time     | <30sec.   |
| CO<br>(H <sub>2</sub> compensation) *1     | Measurement range | 0 ~ 2000ppm (Max. over load 10000ppm)   |
|  | Accuracy          | ±10ppm or ±5% reading (0 ~ 2000ppm)*2<br>±10% reading (2001 ~ 10000ppm)         |
|  | Resolution        | 1ppm  |
|  | Response time     | <40 sec.(0 ~ 2000ppm) <60 sec.(2001 ~ 10000ppm)                                 |
| CO low<br>(H <sub>2</sub> compensation) *1 | Measurement range | 0 ~ 300ppm  |
|  | Accuracy          | ±2ppm (0.0 ~ 39.9ppm)<br>±5% reading (40.0 ~ 300ppm)                            |
|  | Resolution        | 0.1ppm  |
|  | Response time     | <40 sec.  |
| CO high                                    | Measurement range | 0.00 ~ 4.00vol% (Max. over load 10.00vol%)                                      |
|  | Accuracy          | ±0.02vol% or ±5% reading (0.00 ~ 2.00vol%)*2<br>±10% reading (2.01 ~ 10.00vol%) |
|  | Resolution        | 1ppm or 0.01vol% (0 ~ 10000ppm) 0.01vol% (10000ppm ~)                           |
|  | Response time     | <60 sec. (0.00 ~ 2.00vol%) <100 sec. (2.01 ~ 10.00vol%)                         |
| NO   | Measurement range | 0 ~ 1000ppm (Max. over load 3000ppm)  |
|  | Accuracy          | ±5ppm or ±5% reading (0 ~ 1000ppm)*2<br>±10% reading (1001 ~ 3000ppm)           |
|  | Resolution        | 1ppm  |
|  | Response time     | <40 sec. (0 ~ 1000ppm) <60 sec. (1001 ~ 3000ppm)                                |
| NO low                                     | Measurement range | 0 ~ 300ppm  |
|  | Accuracy          | ±2ppm (0.0 ~ 39.9ppm)<br>±5% reading (40.0 ~ 300ppm)                            |
|  | Resolution        | 0.1ppm  |
|  | Response time     | <40 sec.  |
| NO <sub>2</sub>                            | Measurement range | 0 ~ 200ppm (Max. over load 500ppm)  |
|  | Accuracy          | ±10ppm (0 ~ 200ppm)<br>±10% reading (201 ~ 500ppm)                              |
|  | Resolution        | 1ppm  |
|  | Response time     | <60 sec. (0 ~ 200ppm) <100 sec.(201 ~ 500ppm)                                   |
| SO <sub>2</sub>                            | Measurement range | 0 ~ 2000ppm (Max. over load 4000ppm)  |
|  | Accuracy          | ±10ppm or ±5% reading (0 ~ 2000ppm)*2<br>±10% reading (2001 ~ 4000ppm)          |
|  | Resolution        | 1ppm  |
|  | Response time     | <60 sec. (0 ~ 2000ppm) <100 sec. (2001 ~ 4000ppm)                               |
| CO <sub>2</sub>                            | Measurement range | 0.00 ~ 20.00vol%  |
|  | Accuracy          | ±0.50vol% or ±5% reading *2   |
|  | Resolution        | 0.01vol%  |
|  | Response time     | <40 sec.  |
| Pressure                                   | Measurement range | ±100hPa   |
|  | Accuracy          | F.S.±2%   |
|  | Resolution        | 0.01hPa   |
| Flue gas temperature                       | Measurement range | 0 ~ 650°C 0 ~ 1100°C (depend on probe tube)                                     |
|  | Accuracy          | Measured value = 0 ~ 100°C: ±2°C<br>Measured value = 100°C ~ : ±2% reading      |
|  | Resolution        | 0.1°C (0 ~ 999.9°C), 1°C (1000 ~ 1100°C)  |
| Ambient air temperature                    | Measurement range | 0 ~ 100°C   |
|  | Accuracy          | ±2°C  |
|  | Resolution        | 0.1°C   |

## Calculated items\*3

|   |  |
|---|--|
| CO <sub>2</sub> (Only CO <sub>2</sub> sensor mounted units) | 0 ~ CO <sub>2</sub> Max (Calculation from O <sub>2</sub> )           |
| NO <sub>x</sub>   | 0 ~ calculated value (Only NO <sub>2</sub> sensor non-mounted units) |
| O <sub>2</sub> Calculated items                             | 0 ~ calculated value (User-specified O <sub>2</sub> )                |
| Excess air  | 1.00 ~ 19.9  |
| Losses  | 0 ~ 99.9%  |
| Efficiency  | 0 ~ 100%   |
| Dew point   | 0 ~ 99°C   |
| Velocity  | 3 ~ 100m/s   |
| Flow rate   | 0 ~ calculated value   |

## Fuel

13A, 12A, 6C, 5C, 5B, LPG, Kerosine, Right oil, Banker A, Banker B, User-specified fuel

## Sensor

|                                      |                                     |
|--------------------------------------|-------------------------------------|
| O <sub>2</sub>                       | Electrochemical                     |
| CO (H <sub>2</sub> compensation)     | Electrochemical                     |
| CO low (H <sub>2</sub> compensation) | Electrochemical                     |
| CO high                              | Electrochemical                     |
| NO                                   | Electrochemical                     |
| NO low                               | Electrochemical                     |
| NO <sub>2</sub>                      | Electrochemical                     |
| SO <sub>2</sub>                      | Electrochemical                     |
| CO <sub>2</sub>                      | NDIR                                |
| Flue gas temp.                       | K thermocouple                      |
| Ambient air temp.                    | K thermocouple                      |
| Pressure                             | Piezoregistive semiconductor sensor |

## Main unit

|             |  |
|-------------|--|
| Temperature | Operation : +5°C ~ +45°C<br>Storage : -20°C ~ +50°C  |
| Display     | TFT color display 6 lines⇔2 lines switchable indication  |
| Size        | (W×H×D) 112×244×54 mm  |
| Weight      | Approx.880g  |
| Power       | Battery charger (AC100-240V 50/60Hz DC5V 1200mA)<br>lithium-ion rechargeable (Max.8hours continuous operation) |

## Standard equipment

|                |   |   |
|----------------|---|---|
| Built-in       | Pump, Mini-USB interface, Data logger, Interface for printer  |   |
| Accessory      | Battery charger (USB cable), Sampling probe, Condensate trap, Shoulder strap, Hose for pressure measurement, ABS case |   |
| Description    | Art.No.   | Spec. / remarks   |
| Sampling probe | HT-1010   | L=300mm φ6mm Flue gas temp.0 ~ 650°C<br>Hose length2700mm |

## Option

|                             |          |  |
|-----------------------------|----------|--|
| Probe tube                  | HT-7230  | L=300mm φ6mm flue gas temp.0 ~ 650°C             |
|                             | HT-7235  | L=500mm φ6mm flue gas temp.0 ~ 650°C             |
|                             | HT-7232  | L=750mm φ6mm flue gas temp.0 ~ 650°C             |
|                             | HT-7233  | L=750mm φ8mm flue gas temp.0 ~ 1100°C            |
| Probe handle                | HT-7205  | Sampling hose length 2700mm                      |
| Draft probe                 | HT-1050B | L=180mm φ5mm hose length 3000mm                  |
| Ambient air temp. sensor    | HT-2305  | 0 ~ 100°C  |
| Auto measurement function   | HT-2746  | Data logging function, user-specific adjustable  |
| Flow measurement function*4 | HT-2747  | flow velocity measurement by mean of pitot tube  |
| Pitot tube                  | HT-3051  | L=300mm φ6mm                                     |
|                             | HT-3052  | L=500mm φ6mm                                     |
|                             | HT-3053  | L=800mm φ6mm                                     |
|                             | HT-3054  | L=1000mm φ8mm                                    |
| CO purge pump               | HT-2721  | For COsensor protection                          |
| Measurement software for PC | HT-2074  | Online View 2000 (Recommended OS : Windows XP/7) |
| SD card interface           | HT-2774  | SD card (2GB)                                    |
| SD card                     | HT-2702  | 2GB  |
| Bluetooth module*5          | HT-2733  | For measurement software                         |
| IR Printer                  | HT-1610  | Roll paper×1 AA battery ×4                       |
| IR Printer roll paper       | HT-1636  | 5rolls   |

\*1 : Compensate measured value when measure flue gas include H<sub>2</sub> components.

\*2 : The higher value is the applicable ones.

\*3 : Depend on area flue gas may have difference, so calculated data also may have difference.

\*4 : Select HT-3051 ~ HT-3054 Pitot tube.

\*5 : Measurement software (HT-2074) is necessary.

\* Accuracy is based on cylinder gas.

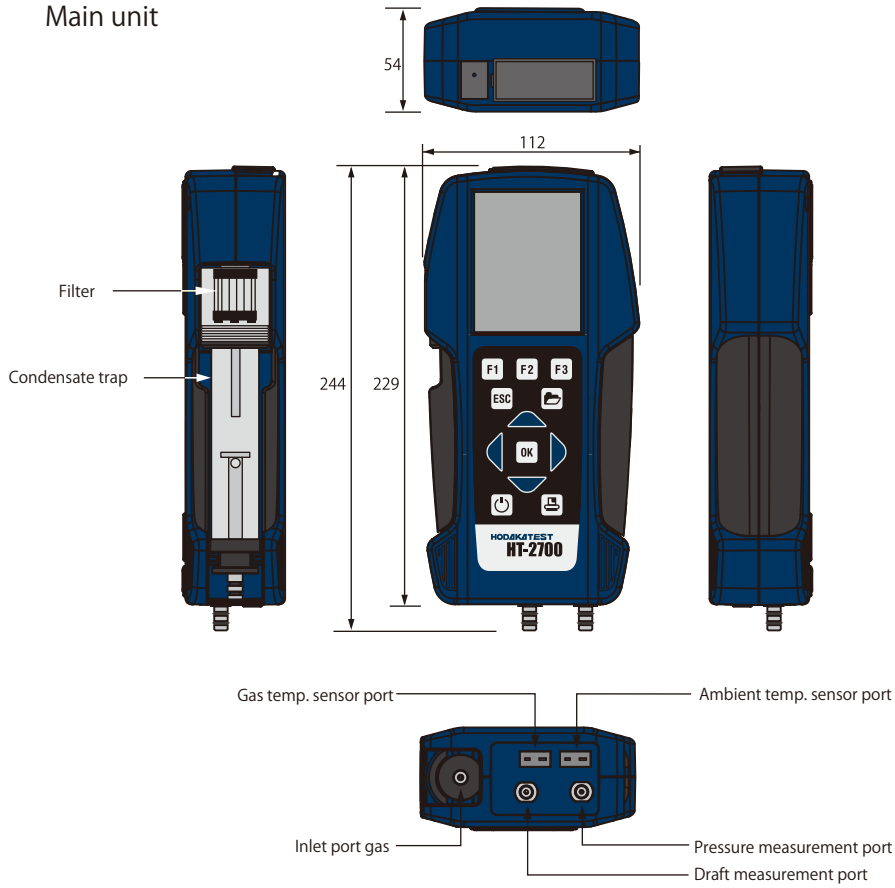
This specification might be changed for improvement.

# Dimension

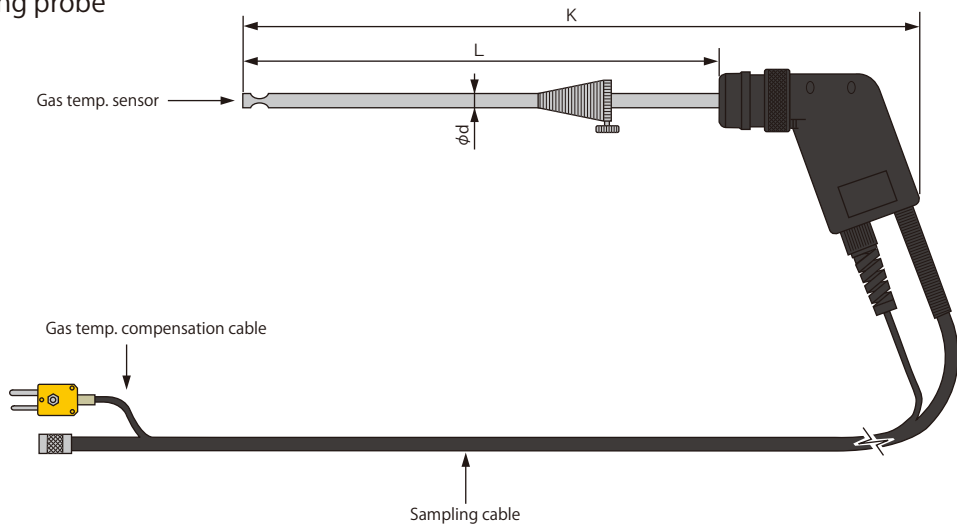
# Flue gas analyzer HT-2700



## Main unit



## Sampling probe



| Description    | Art.No. | L(mm)   | K(mm) | $\phi d$ (mm) | Sampling hose length(mm) | Gas temp. (°C) |
|----------------|---------|---------|-------|---------------|--------------------------|----------------|
| Sampling probe | HT-1010 | 0 ~ 300 | 370   | 6             | 2700                     | 0 ~ 650        |