

**OPERATING INSTRUCTION MANUAL**  
**FOR**  
**RIKEN HEAT-PROOF DETECTOR HEAD**  
**MODEL GD-A250 SERIES**  
**(Direct Mounting Type)**

**FOR USERS**

**Safety precautions**

1. Read and understand the instructions in this manual before operating this instrument.
2. Keep manual accessible at all times.
3. This detector cannot be used for any other purpose than what is specified in this manual.
4. Follow all the instructions in this manual, any deviation will compromise the safety, quality and performance of this instrument.
5. We accept no responsibility for an accident caused by the user not following the instructions in this manual.

**RIKEN**  
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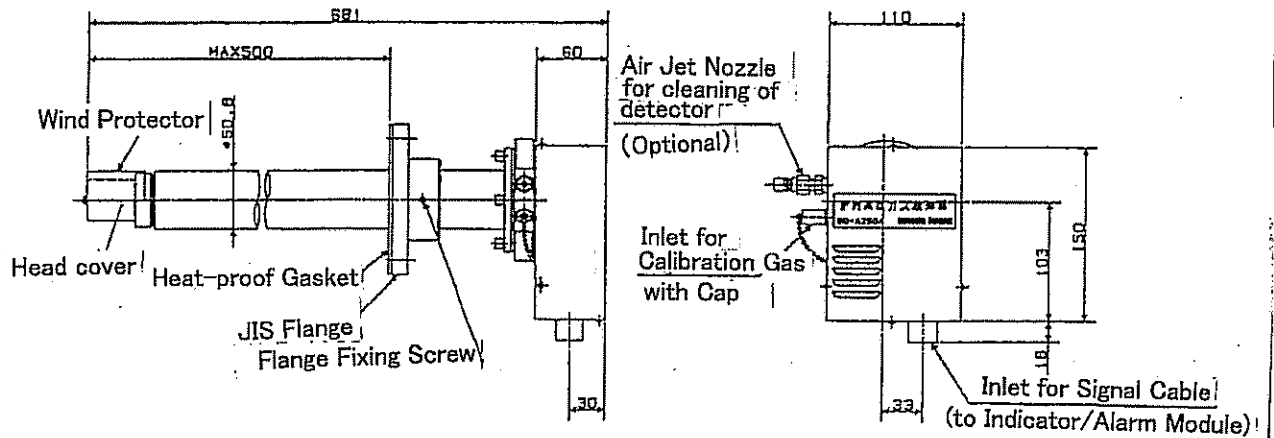
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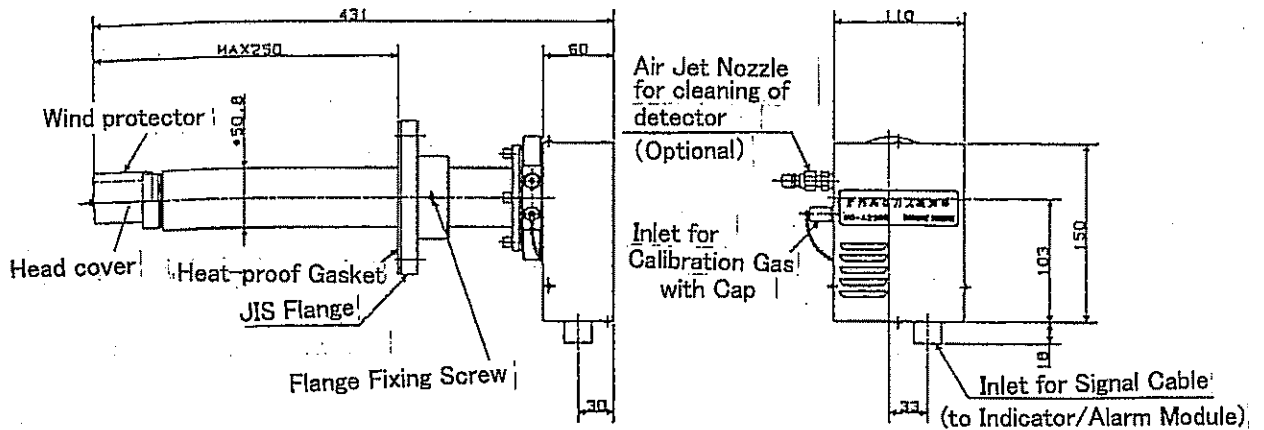
# 1. DESIGNATIONS

Heat-proof gas detector head : Model GD-A250, GD-A250A (Fig. 1)



Main Material of Inserting Pipe : SUS304  
 Weight : 5.7kg(with Flange)

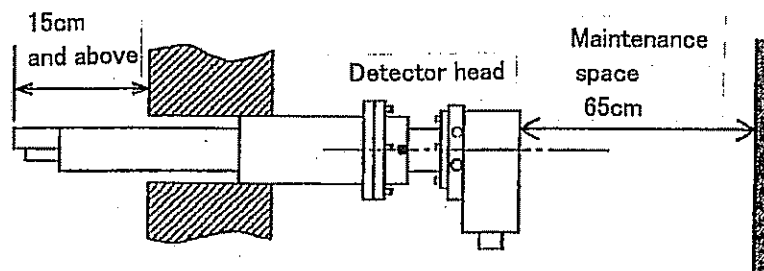
Heat-proof gas detector head : Model GD-A250B, GD-A250S (Fig.2)



Main Material of Inserting Pipe : SUS304  
 Weight : 5kg(with Flange)

## 2. CAUTION IN INSTALLATION

- (1) Although this detector head is available in a place whose temperature is up to 250°C, use it in a circumstance which does not exceed 200°C and does not have a hard temperature change.
- (2) Install it in a place which does not have vibration or shock.
- (3) Avoid any place easily affected by high frequency.
- (4) Place the pipe horizontally and make the cable inlet downward.
- (5) Place the wind protector at the tip of the pipe against wind,
- (6) Do not use this detector head under circumstance where silicon vapor exists.
- (7) Insert the tip of the pipe to the depth of more than 15cm to have an accurate measurement.
- (8) Keep the space at the rear of terminal box more than 65cm as the maintenance space.

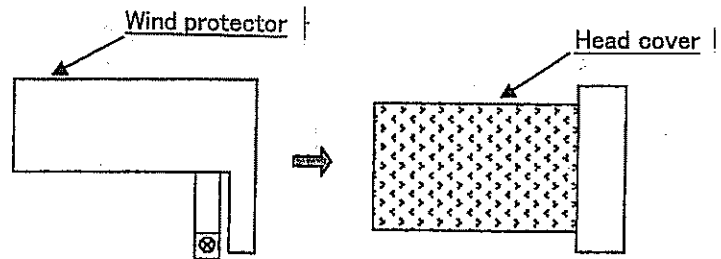


- Fig.3 -

### 3. MOUNTING THE WIND PROTECTOR

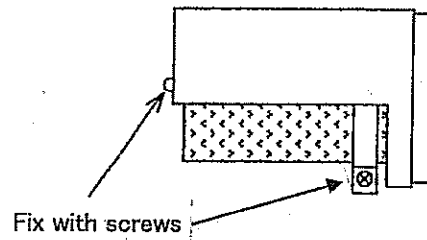
Be sure to mount the wind protector in accordance with the following procedures:

- ① Insert the wind protector from the tip of detector head (Head cover)



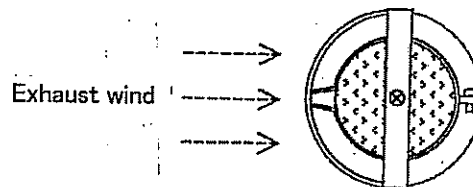
- Fig. 4 -

- ② Fix the wind protector with 2 screws firmly



- Fig. 5 -

- ③ When install it to the furnace, it must be taken care that the exhaust wind shall be hit against wind protector



- Fig. 6 -

## 4. CAUTION IN WIRING

- (1) Apply the following wiring materials.
  - The standard connection is done with conduit tube (Nominal size 19, female screw)
  - Use CT, CVV, VGT cable etc. of which cross sectional area of cable core shall be more than 0.75cm<sup>2</sup>
- (2) Distance between indicator/alarm module and the detector head shall be within 50m in principle.
- (3) Do not apply the same cable for the connection between detector head and indicator/alarm module as for commercial power supply.

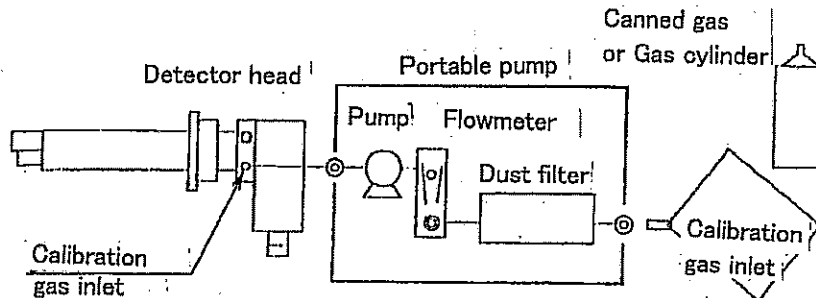
## 5. CAUTION IN OPERATION

- (1) The sensor inside of the pipe is designed for high temperature application. However, once the temperature becomes beyond 250°C or 260°C, accurate measurement cannot be performed.  
In that case, change the sensor with new one. And then, it is required to make zero and span calibrations again.
- (2) Do not let tar material on the sensor covered by sintered metal at the tip of the pipe. If tar adhered to the sintered metal, clean it up periodically before it hardens onto the sintered metal. If use it with tar stuck, correct measurement cannot be performed.
- (3) If transceiver is used around the detector head or the cable between detector head and indicator/alarm module, indication might be affected by electromagnetic wave from the transceiver. When transceiver is used, take it away from these instruments.
- (4) Be sure to tighten the cap for calibration gas inlet after completion of calibration work if it is removed at the time of calibration etc.  
If not, correct gas detection cannot be performed. Furthermore, it is in danger of exhausting the detection gas around the detector head.
- (5) Since the temperature sensor used in this detector head is to correct the temperature characteristics of gas sensor, there are some differences against actual temperature. Use it as a reference.

## 6. GAS CALIBRATION

(1) Following calibration kits/jigs are required to perform gas calibration.

- Portable pump or calibration gas supplying unit
- Gas sampling bag
- Zero gas
- Calibration gas



- Fig. 7 -

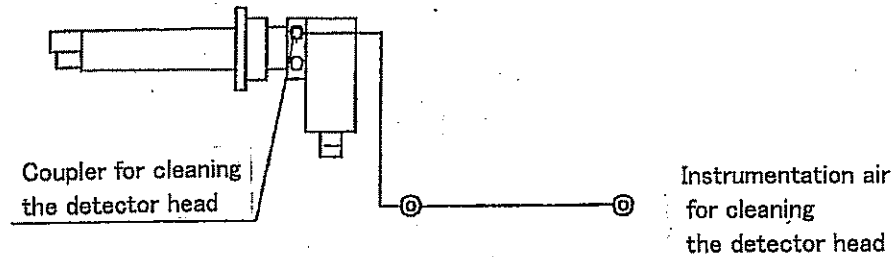
(2) For calibration work, please contact our nearest agent or RIKEN KEIKI.

- a) Zero Calibration  
Please contact our nearest agent or RIKEN KEIKI.
- b) Span calibration  
Please contact our nearest agent or RIKEN KEIKI.

## 7. CLEANING THE DETECTOR HEAD

Some substances adhered on the sintered metal can be blown when compressed air like instrumentation air (Clean air, below 7kg/cm<sup>2</sup>) is jetted out.

- Hardened substances is hardly blown out. Clean it up before hardning.

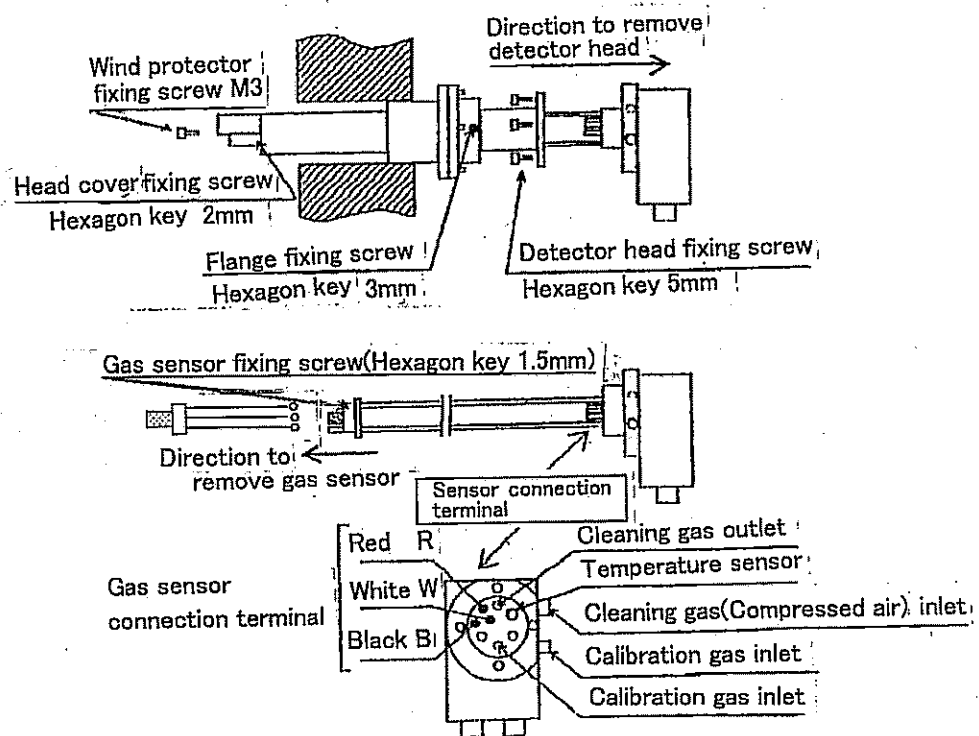


- Fig. 8 -

## 8. REPLACING THE SENSOR

Whenever replacing the sensor, it is required to make electrical adjustments and gas calibration.

Please contact our nearest agent or RIKEN KEIKI.



- Fig. 9 -



## 9. CLEANING/REPLACING THE HEAD COVER

Keep a ventilation of head cover for gas sensor by cleaning the detector head according to the environment in use.

Also check/replace the head cover before resins etc. are adhered on the head cover.

To remove the detector head, loosen the flange fixing screws(4 pcs), and the detector head can be removed out (See Fig. 9).

## 10. SPECIFICATIONS

Model	GD-A250	GD-A250A	GD-A250S	GD-A250B
Structure	Direct mounting type, non-explosion proof			
Detection principle	Catalytic combustion method			
Detection method	Diffusion sampling			
Temperature sensor	Provided	Not provided	Provided	Not provided
Detection gas	Solvents and combustible gas in drying furnace			
Detection range	0~100%LEL			
Operating temperature	0~250°C(at constant temperature)			
Ambient humidity	Below 90%RH (Non-condensing)			
Response time	Within 30 sec(when exposed to gas concentration of 1.6 times alarm level)			
Applicable cable	1.25sq, CVVS 4C	1.25sq, CVV 4C	1.25sq, CVVS 4C	1.25sq, CVV 4C
Temperature compensation wire	VX-G-1S (7/0.65 x 1P)	—	VX-G-1S (7/0.65 x 1P)	—
Outer dimensions	681(L) x 110(W) x 150(D)mm		431(L) x 110(W) x 150(D)mm	
Weight	Approx 5.7kg (including flange)		Approx 5.0kg. (including flange)	

## 11. WARRANTY

### RIKEN KEIKI STANDARD WARRANTY FOR FIXED GAS DETECTION INSTRUMENTS

RIKEN KEIKI CO., LTD. warrants gas alarm equipment manufactured and sold by us to be free from defects in materials and workmanship for a period of one year from date of shipment from RIKEN KEIKI CO., LTD. Any parts found defective within that period will be repaired or replaced, at our option, free of charge, F.O.B. factory. This warranty does not apply to those items which by their nature are subject to deterioration or consumption in normal service, and which must be cleaned, repaired or replaced on a routine basis.

The alarm contact output specified in this system is provide for the use of buzzer and lamp to be communicated to the other external place than the system installed. But to secure the safety, there may be the case that the following interlocking performance shall be made by use of alarm contact output from customers.

1. Stop the gas supply.
2. Stop the action of system which uses gas.
3. Let the services exhaust fan operated.
4. Let stop the work of the staffs in the area by the auto paging system and escaped to the outside from there
5. Let the alarm transmitted to a remote place by auto communication system.
6. Let the alarm transmitted by the lamp and buzzer to this area and that area.
7. Others

But, we do not assume the responsibility for the secondary damage, which may be generated by this interlocking action because it is not in our scope of recognition. Then, we cannot strike the sales contract or the manufacture in the scope to reimburse this secondary damage.

Warranty is voided by abuse including rough handling, mechanical damage, operation, alteration, or repair procedures not in accordance with instruction manual. This warranty indicates the full extent of our liability, and we are not responsible for removal or replacement cost, local repair costs, transportation cost, or contingent expenses incurred without our prior approval.

This warranty covers instruments and parts sold (to users) only by authorized distributors, dealers and representatives as appointed RIKEN KEIKI CO., LTD..

We do not assume the indemnification for any accident or damage caused by the operation of this gas monitor and our warranty is limited to the replacement of parts or our complete goods.

**Furnace safety monitor**  
**GP-671 Specifications**

Measuring gas	: Solvent gas or combustible gas in furnace
Indication	: Gas concentration(%LEL), Detector temperature (°C) in furnace
Applicable detector	: Direct insert type gas detector
Signal output	: Gas in furnace: 4-20mA (Max 300 Ω) or 0-1V Detector temp.: 4-20mA (Max 300 Ω) or 0-1V
Gas alarm	
Alarm setting	: 1 <sup>st</sup> 10%LEL (Standard) 2 <sup>nd</sup> 25%LEL (Standard)
Alarm function	: Lamp, Buzzer, Latching, Non-latching after reset
Alarm output	: 1 <sup>st</sup> C contact (AC100V, 0.1A, DC30V, 0.3A) 2 <sup>nd</sup> C contact (AC100V, 0.1A, DC30V, 0.3A)
Alarm accuracy	: ±25% of standard preset alarm level
Alarm delay time	: Within 30 sec when applying 1.6 times of preset alarm level.
Trouble alarm	
Alarm output	: A contact (AC100V, 0.1A, DC30V, 0.3A)
Zero suppression	: 5%LEL (Standard), Selectable from 0-20%LEL (Option)
Operating temp. & humid	: 0-40°C, 90%RH or below
Operating temp. (detector)	: 0-250°C
Power supply	: AC100V±10% 50/60Hz
Power consumption (including detector)	: Approx.18VA
Dimensions	: Approx.300(W) x 350(H) x 102(D) mm (Without installation plate)
Weight	: Approx.5.5kg

Note: The letter printed on the instruments is Japanese only.

## Direct insert type gas detector

### GD-A250 Specifications

Model	: GD-A250
Structure	: Direct insert type (non-explosion proof)
Detection principle	: Catalytic combustion
Detection method	: Diffusion sampling
Detection gas	: Solvent gas or combustible gas in furnace
Detection range	: 0-100%LEL
Temperature sensor	: Equipped
Response time	: Within 30 sec. (Time to activate alarm when applying 1.6 times of preset alarm level.)
Cable	: 1.25sq CVVS-4C
Temperature compensation cable	: VX-G-1S (7/0.65x1P)
Operating temperature	: 0-250°C
Operating humidity	: 90%RH or below (no condensing)
Dimensions	: Approx.110(W) x 150(H) x 681(D) mm
Weight	: Approx.5.7kg (Including flange)

Note: The letter printed on the instruments is Japanese only.