PT2E-3344

RIKEN KEIKI

Gas Detector Head
GD-84D-EX Series

GD-84D-EX -EC
GD-84D-EX
GD-84D-EX-ET-EC
GD-84D-EX-ET
GD-84D-EX-EA-EC
GD-84D-EX-EA

Quick Reference Guide

Thank you for purchasing this GD-84D-EX series Gas Detector.
This document is a Quick Reference Guide.
For operating instructions and precautions, please refer to the instruction manual posted on our website.
https://www.rikenkeiki.co.jp/english

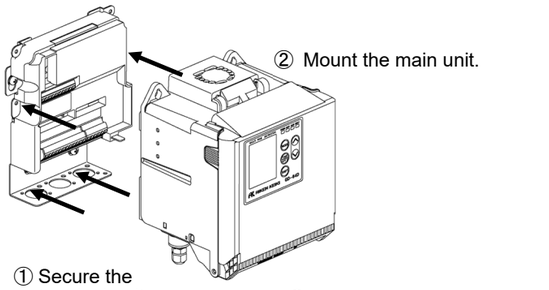
RIKEN KEIKI Co.,Ltd.

<Install the main unit (4 – 20 mA models/EA models)>

1 Place the terminal unit against the installation surface and secure with four screws(M4).

2 Mount the main unit to the terminal unit.

3 Open the front cover of the main unit and use four built-in screws to secure to the terminal unit.



Warranty

For warranty information, please refer to the warranty card included in the package.

Before use

<Checking included items>

Check the main unit and the accessories. If any items are missing, contact our sales department.

- Main unit: 1
- Terminal unit (4 - 20 mA models/EA models only): 1
- Protective rubber caps: 2
- Dust filter: 1
- Mounting plates for compatibility with GD-70D: 2
- Quick reference guide : 1
- Warranty card: 1

◎ The mounting plate for compatibility with GD-70D is a special accessory.

<Communication systems by model and corresponding sensors>

Model	Communication method	Corresponding sensor	Power source
GD-84D-EX-EC	4 - 20 mA	ESF	24 V DC
GD-84D-EX	4 - 20 mA	NCF/SGF /SHF/ESF	24 V DC
GD-84D-EX-ET-EC	Ethernet	ESF	PoE+
GD-84D-EX-ET	Ethernet	NCF/SGF /SHF/ESF	PoE+
GD-84D-EX-EA-EC	4 - 20 mA Ethernet	ESF	24 V DC PoE+
GD-84D-EX-EA	4 - 20 mA Ethernet	NCF/SGF /SHF/ESF	24 V DC PoE+

◎ GD-84D-EX-ET and GD-84D-EX-ET-EC lack the functionality required for contact output.

◎ Do not use 24 V DC and PoE+ power supplies at the same time.

Installing the main unit

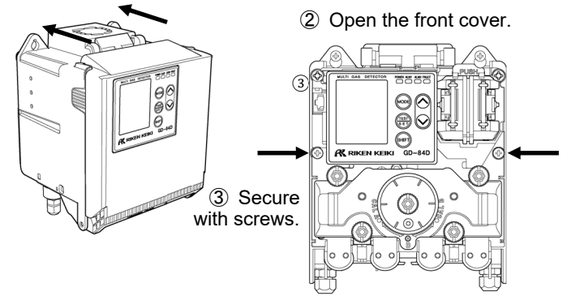
◎ Refer to the operating manual for installation precautions.
◎ Refer to the operating manual for information about installation when using the mounting plate for compatibility with GD-70D.
◎ Confirm in advance that there is sufficient space for maintenance.
◎ Remove the protective rubber caps fitted to GAS IN and GAS OUT.

<Install the main unit (ET models)>

1 Place the main unit against the installation surface and secure with two cross recessed head screws with captive washers (plain washer + spring lock washers) (M4-14).

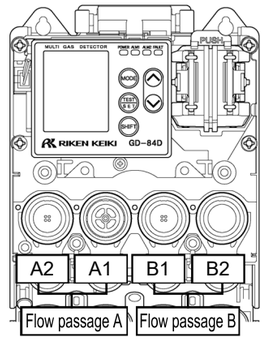
2 Open the front cover of the main unit and use two built-in screws to secure to the installation surface.

① Secure with cross recessed head screws with captive washers.



<Fitting sensors>

Up to four sensors can be fitted in this product.
From left, the positions for the sensors are [A2] [A1] [B1] [B2]. These correspond to the [A2] [A1] [B1] [B2] displays on the LCD screen.



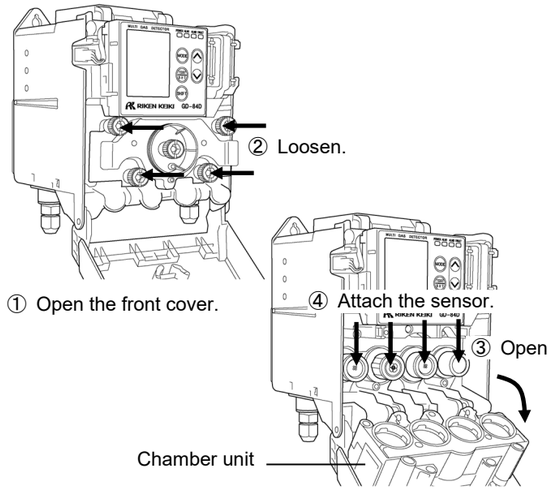
CAUTION

- Handle the sensors with care.
- In general, do not retain or store the sensors after removal from the product. Contact Riken Keiki to handle sensor disposal.
- Be especially careful to fit the sensors correctly. [C-02] will appear on the LCD when the sensor fitted relies on a different principle or has different specifications from the sensor intended to be fitted when the product was shipped.
- Perform calibration (zero calibration, span adjustment) after fitting the sensors.

1 Open the front cover of the main unit. Loosen the four white knurled screws and pull the chamber unit towards you.

2 Grasp the cylindrical part of the sensor and attach to the product.
Match the direction of the connector and push in firmly. Avoid pressing on the top of the sensor while doing this.

3 Return the chamber unit to its original position and tighten the four white knurled screws.



<Wiring>

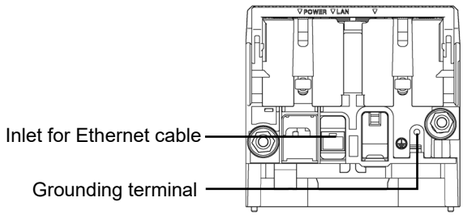
◎ Refer to the operating manual for wiring precautions.
◎ Refer to the operating manual for the specifications for cables and the terminal plate.
◎ Refer to the operating manual for recommended cables.

1 Connect the power and signal cables to the product.

2 Connect the cables to the terminal plate. (4 - 20 mA models/EA models)

3 Connect the ground wire to the ground terminal.

(Illustration shows ET/EA models)



WARNING

- Be sure to ground the product before supplying power.
- Never connect grounding wires to gas pipes.
- Make sure the grounding is Class D or equivalent (grounding resistance not exceeding 100 Ω).
- Make sure the grounding cable is fitted with cable lugs. Connect to ground free of slack or twisting.

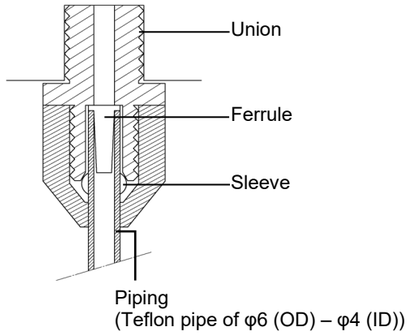
<Laying pipes>

◎ Some gases are highly adsorptive or corrosive. Select the piping material in consideration of the characteristics of the gas to be detected.

◎ Do not lay piping with U or V shaped angles.

◎ Please contact us to discuss pipe length when samples are to be drawn from distant points.

Install the pipes for the sampling pipes (GAS IN, GAS OUT) as shown below.

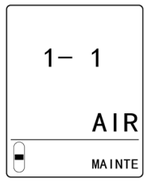


WARNING

- Avoid applying excessive pressure to the sampling pipe openings.
- Discharge gas exhausted after detection to a location determined to be safe by connecting an exhaust pipe to GAS OUT.

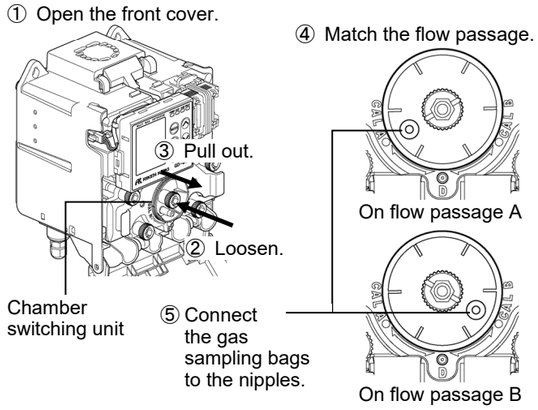
<Performing air calibration>

1 Hold down the MODE key and press the TEST/SET key when the screen at right appears.

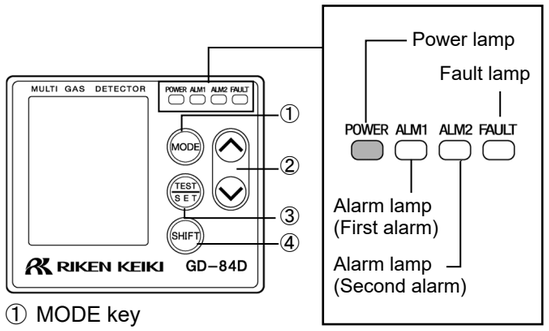


2 Press the ▲ key or ▼ key to select the sensor to be air calibrated.
The display will cycle through the following selections:
[A1]⇔[A2]⇔[B1]⇔[B2]⇔Select all.

3 Connect the gas sampling bag to this product.
- When Select all is selected: Connect the gas sampling bag to GAS IN.
- When performing for each sensor: Match the nipple of the chamber switching unit to the flow passage of the sensor and connect the gas sampling bag (see below).



Front panel and LCD screen displays



① MODE key
Hold down in detection mode to switch to user mode.
Hold down this key in user mode or maintenance mode to return to detection mode.

② ▲ key and ▼ key
Used to select sensors or adjust values

③ TEST/SET key
Hold down in detection mode to switch to the mode used to perform alarm tests.
Used in various modes to confirm values or select settings.

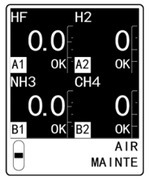
④ SHIFT key
This key is used for supplementary functions in various modes.

4 Connect the gas sampling bag for exhaust gas to GAS OUT on this product.

5 Press the TEST/SET key to confirm the sensor to be calibrated.

6 Introduce the air calibration gas. Press the TEST/SET key when the readings stabilize.

7 Check the air calibration results.
If air calibration is successful
[OK] is displayed. The display returns to the display in step 2.
If air calibration failed
[NG] is displayed. The display returns to the display in step 2.

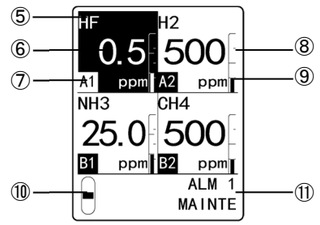


8 Disconnect the gas sampling bag with calibration gas and the gas sampling bag for exhaust gas from the product.
After performing air calibration for each sensor, be sure to return the chamber switching unit to the [D] (detection mode) position.

9 Press the MODE key to display [1-1 AIR].

10 Hold down the MODE key to switch to detection mode.

◎ Refer to the operating manual for more information on air calibration.



⑤ Gas name display
⑥ Concentration display
⑦ Sensor positioning indicators
⑧ Concentration bar display
The detection range (full scale) is scaled. The gas concentration is displayed as ratios of the full scale.
⑨ Units display
⑩ Flow display
The suction is 0.6 L/min (standard flow rate) when the suction flow rate indicator bar is positioned in the middle.
⑪ Maintenance display section

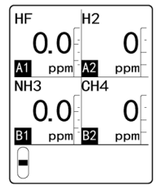
◎ Alarm contacts are disabled when [MAINTE] appears in the maintenance display section.

◎ The suction flow rate for this product is automatically adjusted by the automatic flow adjuster function. The flow rate is automatically adjusted even if the flow display varies from the stipulated flow rate. No flow adjustment is normally required.
If automatic adjustment is not possible due to a blockage or leak in the piping, adjust manually until the flow reaches the stipulated value. Refer to the operating manual for information on manual adjustments.

<Measuring gas concentrations>

Measure gas concentrations in detection mode.

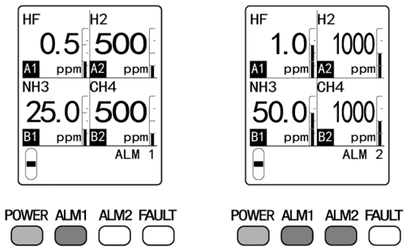
◎ The product cannot detect gases while in user mode or maintenance mode. Be sure to return to detection mode after user mode or maintenance mode operations are complete.



When the detected gas or oxygen concentration reaches the alarm setpoint or exceeds the alarm setpoint, the alarm lamp lights up in red.

◎ The contacts will activate on 4 - 20 mA models/EA models.

First alarm



Second alarm

- When a gas alarm is triggered, respond promptly in accordance with the rules established for the site or facility.
- To cancel an alarm, press the MODE key, TEST/SET key, ▲ key, or ▼ key in detection mode.

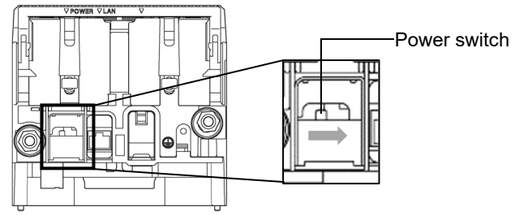
Measuring gas concentrations

<Preparations for startup>

Perform the following checks before connecting the power supply.
- Is the product grounded?
- Is external wiring connected correctly?
- Is the voltage of the supplied power source within the rated range?
- Is the connected piping free of blockages and leaks?
- Are filters properly attached (if necessary)?

<Turning on the power>

Turn on the power switch on the underside of the main unit to start.



Initialization will take place after the power is turned on. This will take approximately 25 seconds. The process performs system checks and disables alarms, and performs other startup settings, then enters detection mode.
Do not turn the power off during initialization.

◎ External contacts may activate immediately after the initial clear. Take precautions to prevent unwanted consequences in this case.