

Preparation for start-up

1. Check that the battery level is sufficient.
2. Check that there is no bend or hole in the gas sampling hose.
3. Check that the filter in the gas sampling probe is free of dust or clogging.
4. Check that the gas monitor, gas sampling probe, and gas sampling hose are connected properly.

How to use

1. How to start the gas monitor

Keep the POWER switch pressed for three seconds or more.
If it beeps 30 seconds later from the power on, it is the detection mode.

2. Air calibration

Press and hold the AIR switch.
Release it after the display shows "RELEASE" below
When the zero adjustment is successfully completed, END is displayed, and the reading value turns to zero (20.9% for O₂)

CAUTION: Perform it in fresh air.

3. How to detect

In the detection mode, put the gas sampling probe close to the detection area and take the reading on the display.

4. Alarm action/How to turn off the alarm

[Alarm action]

Buzzer sounds and the display of reading value & the lamp blink. Unless it is not turned off, the alarm continues to sound even without the measuring gas.

[How to turn off the alarm]

Press "RESET" button after the value of measuring gas recovers below to the alarm point (the value for O₂ sensor is 19.6-23.4vol%.)

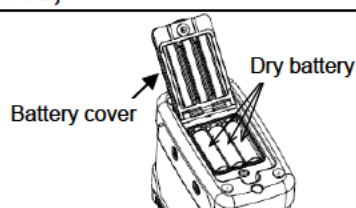
5. How to exit

Make the gas monitor draw in fresh air. After the display returns to zero (or 20.9% for oxygen), keep the POWER/ENTER switch pressed until the power is turned off.

6. Replacing dry batteries / Recharging of Li-ion batteries

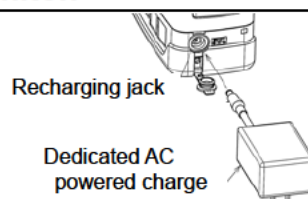
[Dry battery unit]

Replace all the three batteries with new ones paying attention to the polarities of batteries,



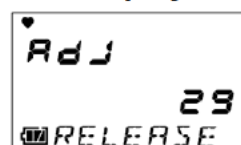
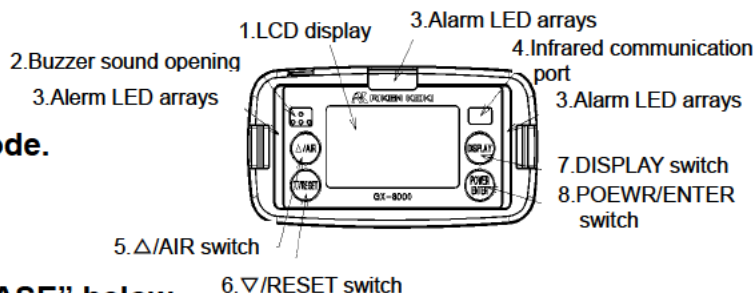
[Li-ion battery unit]

Put the plug of the AC powered charger into the recharging jack of the gas monitor.



CAUTION: Replace and recharge batteries in a non-hazardous area.

【Names for each part】



A 30-second countdown is started on the LCD. (TYPES-A and E only)

Troubleshooting

Failure	Cause	Action
<u>The power cannot be turned on.</u>	The battery level is too low	1. Dry battery unit: Replace all the three dry batteries with new ones in a non-hazardous area. 2. Li-ion battery unit: Recharge the batteries in a non-hazardous area.
	Improper installation of battery unit	Check whether battery unit is properly attached to the main unit.
<u>Abnormal operations</u>	Disturbances by sudden surge noise, etc.	Turn off and restart the gas monitor.
<u>Switch operations are disabled.</u>	Disturbances by sudden surge noise, etc.	In a non-hazardous area, remove the battery unit once, and reinstall the battery unit, and turn on the power to perform operations.
<u>System abnormalities</u> 『FAIL SYSTEM』	A circuit abnormality occurred.	Request RIKEN KEIKI for repair.
<u>Sensor abnormalities</u> 『FAIL SENSOR』	A sensor has failed.	Request RIKEN KEIKI to replace the sensor. (Press the RESET switch to continue the operation using only the normal sensors to detect other gases.)
<u>A low battery voltage alarm is displayed.</u> 『FAIL BATTERY』	The battery level is low.	1. Dry battery unit: Turn off the power and replace the dry batteries with new ones in a non-hazardous area.
		2. Li-ion battery unit: Turn off the power and recharge it in a non-hazardous area.
<u>A low flow rate alarm is displayed.</u> 『FAIL LOW FLOW』	Water or oil, etc. was drawn in.	Check any damage or mark of drawn water or oil, etc. on the gas sampling hose
	The gas sampling hose is clogged.	Check connections, clogging, twisting, etc. on the gas sampling hose
	The pump has deteriorated.	Request RIKEN KEIKI to replace the pump.
<u>Fresh air adjustment cannot be performed.</u> 『FAIL AIR CAL』	Fresh air is not supplied around the gas monitor.	Supply fresh air.
<u>The reading value rises(or drops) and remains.</u>	Drifting of sensor output	Perform the zero adjustment (fresh air adjustment).
	Presence of interference gas	Disturbances by interference gases (such as solvents) cannot be eliminated completely. Please contact RIKEN KEIKI for the trouble shooting such as removal filter etc.
	Slow leak	A very small amount of the gas to be detected may be leaking (slow leak). Take actions which is same as for the gas alarm because it may cause dangers.
	Environmental changes	Perform the zero adjustment (fresh air adjustment). In particular, the galvanic cell type is affected by the air pressure.

This simply helps to find the causes of malfunctions which frequently occur. If the gas monitor shows a failure which is not explained in this manual, or still has malfunctions even though troubleshooting are taken, please contact RIKEN KEIKI.

Since this is a safety unit,

Perform a maintenance once or more for every six months to maintain the performance as a safety unit.

Note : Regarding detail, refer to instruction manual