INSTRUMENTS

INSTRUCTION MANUAL
MODEL NH-275
PERSONAL MONITOR FOR AMMONIA DETECTION

accompanying instrument is sold and serviced in the USA by
Instruments, Inc. Please contact RKI Instruments Inc. for any follow
ervice needs, including questions, warranty issues, repairs, and spare
and sensors. Any reference in the attached manual to Riken Keiki
be read as RKI Instruments, Inc. Thank you for selecting this fine
ument for your use. With proper care and maintenance, it will provide
with many years of reliable service.

1. GENERAL DESCRIPTION

It is important the customer reads the instruction manual for proper and satisfactory operation of the monitor.
Model NH-275 is designed to measure the ammonia (NH_3) with range of 0 ～150 ppm in air.
The alarm functions is two alarm levels. When the indicating needle passes through 1st alarm point (10ppm), the red color LED lamp will make flicker and also, when the indication needle passes through 2nd alarm point (25ppm), the red color LED lamp will light continuously and the buzzer will sound in tone. This

monitor can be used with wide environmental temperature range from 0℃ to +35℃。
The sensor of model NH-275 is applied the electrochemical cell which is most reliable accurate principle on the measurement.

Model NH-275 has following remarkable feature.

(1) Minimum interference from other gases and stable at zero point.
(2) Electric consumption is minimum so that it is applied for long hours continuous operation.
(3) Sample drawing system.
(4) Fast response
(5) Easy to operate, small size and light weight, rugged structure.
(6) Dust proof structure and free from rain drops.
(7) Intrinsically safe design
(8) The illumination lamp will be lighted automatically from under of meter scale plate so that the monitor can be used at dark place.

2. SPECIFICATIONS

1)	Model designation	: NH-275
2)	Detection principle	: Electro-chemical method (Membrane-covred glass electrode)
3)	Detection method	: Sample drawing type (flow rate 500cc/mm)
4)	Gas to be measured	: Ammonia (NH_3) in air
5)	Measuring range	: 0～150 ppm
6)	Indication accuracy	: Better than ±30% of indication value at constant condition

7) Alarm preset levels	:	1st ... 10 ppm (Adjustable) 2nd ... 25 ppm (Adjustable)
8) Alarm method	:	1st alarm ... Flashing of alarm lighting & buzzer sound 2nd alarm ... Continuous alarm lighting & buzzer sound
9) Alarm accuracy	:	Better than ±30% at preset alarm level
10) Alarm response	:	Within 60 sec. (Time to get an alarm when detecting 1.6 times thick gas of alarm preset level)
11) Operating conditions	:	0 ℃ to + 35 ℃, below 95% R.H.
12) Power source	:	Alkaline batteries
13) Battery life	:	20 hours with alkaline batteries at 20 ℃
14) Safety	:	Intrinsically safe design
15) Dimensions	:	Approx. 86 (L) x 166 (W) x 185 (H) mm
16) Weight	:	Approx. 1.9 kg

2-2. STANDARD ACCESSORIES

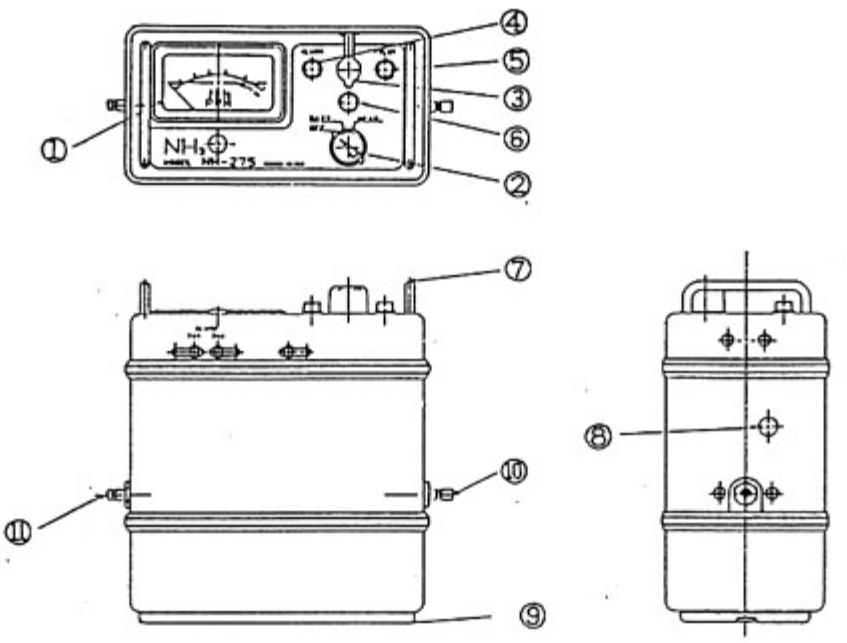
1) Sampling probe ..... 1 pce.
2) Sampling hose ..... 1 pce.
3) Carrying case ..... 1 pce.
4) Alkaline batteries ..... 4 pcs.
5) Maintenance parts for sensor ..... 1 set
   -Membrane ring ..... 2 pcs.
   -Rubber stopper ..... 2 pcs.
   -Syringe ..... 1 pce.
   -Seal tape ..... 2 pcs.
   -Electrolyte ..... 1 pce.

2-3. OPTIONAL ACCESSORIES

- For calibration -

1) Calibration gas cylinder (NH_3 standard gas) 3. 4 ℓ, 100kg/cm2G
2) Reducing valve
3) Gas sampling bag
4) Water trap

3. DESIGNATION OF EACH PARTS



① Meter	⑦ Guard for protection of operation parts
② Main switch	⑧ Alarm buzzer hole
③ CAL adjusting screw	⑨ Bottom plate
④ Alarm lamp	⑩ Gas inlet
⑤ Pilot lamp	⑪ Gas outlet
⑥ Photo window sensor	

4. HOW TO OPERATE

4-1. PREPARATION

1) Connect the water trap to the gas inlet ⑩ of right side of instrument proper.
2) Connect one side of sampling hose to the water trap after the connection between sampling hose and sampling probe.
3) The knurling of the tip of sampling hose and the knurling of water trap is for quick-connect method.

4-2. HOW TO USE

1) Confirmation of battery voltage

   Turn the main switch ② to the position of "BATT" from "OFF". Confirm whether the indication needle of meter is reached to zone of -BATT.- And also, confirm whether green color lamp will light.

   When the indication needle is closed to the edge of left line of "BATT" or below of left line of "BATT", replace with new batteries after turning the main switch ② to "OFF" in accordance with item 5.

2) Turn the main switch ② to the position of "MEAS" and make measurement after the confirmation of zero point on the meter.

   When the gas concentration value passes through the alarm preset point, the alarm lamp and buzzer will sound in tone.

   Note) When this monitor is used at the beginning, make use of monitor after 15 minutes of power switch "ON".

3) When the NH_3 gas concentration passes through 10 ppm, the red color LED lamp will make flicker and the buzzer will sound in tone.

   When the NH_3 gas concentration passes through 25 ppm, the red color LED lamp will light continuously and the buzzer will sound in tone.

4) Lighting of meter illumination lamp

   When the surrounding atmosphere of monitor becomes to dark, 2 pcs of lamp being located on downward side of meter scale plate make light automatically.

5) Treatment after measurement

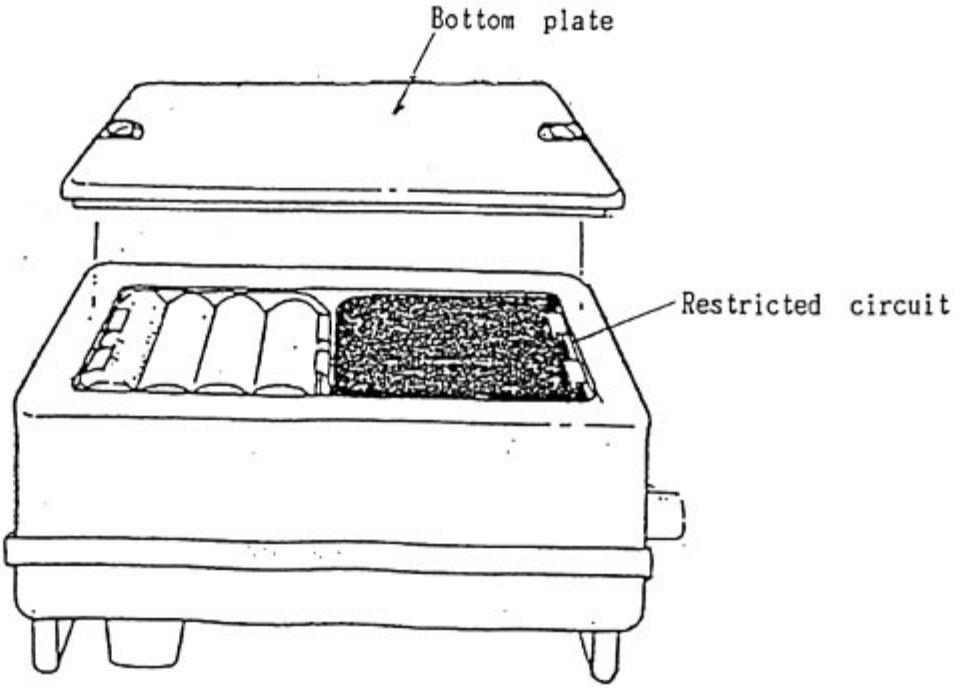
   After measurement, the monitor should be stored with turn-off conditions.

4-3. CAUTION AT HANDLING

1) Make the calibration of gas sensitivity at 3 months interval.
2) Don't drop the monitor and sensor parts into the water and oil.
3) Don't expose the monitor at the following places.
   (a) Direct drought
   (b) Dirty place (dust, mist)
   (c) Water-steam, high-humidity
4) When the transceiver is used around the monitor, take care to use it so that the indicating needle of meter may be moved and also, the alarm buzzer may be sounded.

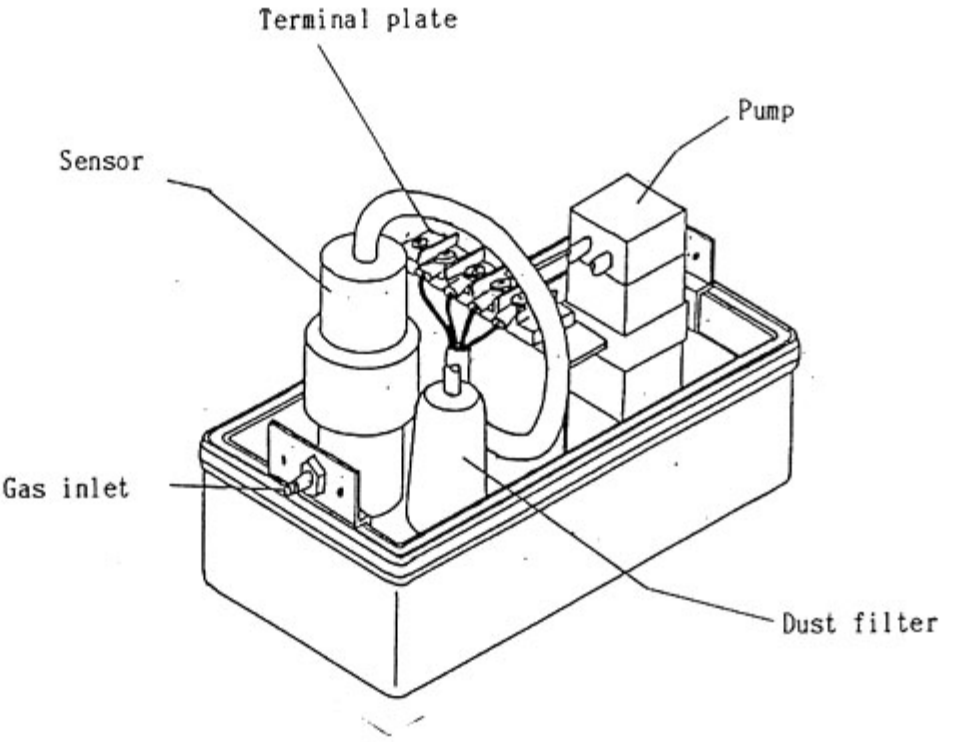
5. REPLACEMENT OF BATTERY

1) Confirm that the main switch is turned to "OFF" put the monitor to the flat desk so that the bottom plate of battery is placed to up side. Take out the bottom plate by loosening 2 pcs of screws.
   You can see the battery holder for 4 pcs of batteries by taking out the bottom plate.
2) Put new battery to the battery holder.
3) Take care of the polarity of battery (⊕ ⊖ is marked on the battery holder).
4) Install the battery plate to previous position after setting the batteries.
5) Set the monitor into the carrying case.



6. REPLACEMENT OF SENSOR

1) Take out 4 pcs of screws for gas inlet port and gas outlet port with plus screw driver.
2) Draw up the upper case by holding the body case and separate it.
3) Take out the 4 pcs of wire connected to terminal plate (4P).
4) Draw out the senosr from chamber by turning to the right and left direction slowly.
5) Insert new sensor to the chamber.
6) Confirm the number indicating to the wire from sensor and the number of terminal. After that, connect it.
7) After the installation of sensor, install the body case and fix the upper case and body case with 4 pcs of screws.
8) In case of the replacement of new sensor, make the gas calibration in accordance with item 7. GAS CALIBRATION.



7. GAS CALIBRATION

Make the gas calibration once a three months in accordance with the following method.

1) Prepare the known calibration gas (NH_3 around 20PPM is suitable) to the gas sampling bag.
2) Turn the main switch to " MEAS " position and connect the gas sampling bag to the tip of gas sampling probe.
3) The indication is became to stable after approx 2 minutes by introducing the calibration gas.
   When the indication is not coincided with the value of calibration gas, adjust the indication to the value of calibration gas by turning the volume of sensitivity.
   When the indication is became to same value of calibration gas, the gas calibration is finished.
4) When it is not possible to adjust the monitor by introducing the calibration gas, replace the sensor in accordance with item 6.