

# **GAS DETECTOR**

**MODEL: EW-401**

**REFERANCE MANUAL**



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## 1. SPECIFICATIONS

### 1-1. INDICATOR

Model	Gas Leak Detector EW-401
Detectable Gases	LPG, LNG, City Gas
Power supply	AC 220V. 50~60Hz
Power consumption	Normal condition - 2.5W. Alarm condition - 3W
Operating Temperature & Humidity	0℃ ~ 40℃, Below 95%(RH)
Detection Range	0 ~ 100% LEL
Alarm point	Combustible gas- below 25% LEL (The set point is 18% LEL now)
Response time	Within 20 sec
Concentration display	3 FND 10 LED bar
Visual & audible Alarm	Yellow LED blinking, Buzzer Sound (above 70dB)
Operating	Green LED
Fault	Yellow LED, buzzer sound (short sound)
Warmup Time	about 1 min.
Cabling	VCT, CVWS (above 0.75mm)
Dimensions	149*259*87mm
Output	DC 12V (20~30mA), Dry contact (COM.NO.NC)
Relay contact	AC 220, 1A
Weight	about 1,718g

### 1-2. SENSOR

Detectable Gases	LPG, LNG, City Gas
Detection Technique	Catalytic combustion, diffusion
Operating Temperature & Humidity	-20℃~50℃. below 95% (RH)
Explosion-Proof	Exd II BT <sub>4</sub>
Conduit entry	16mm inside diameter, 23mm outside diameter
Dimensions	140*142*75 mm
Weight	1,016g
Detection range	0~100%(LEL)
Response time	within 20 sec

## 2. PART & FUNCTION

### 2-1. INDICATOR



1. Power light- Green LED is lit while supplied by AC 220V
2. Alarm mute warning light (B/Z STOP)-Yellow LED blinks if the alarm mute button is pressed. and during this time, the audible alarm is mute in spite of the alarm condition. And if the button is pressed again, the light is eliminated and the buzzer becomes audible again.

3. Fault light (ERROR)- It gets lit when the fuse for the Sensor has blown. Or the Connection wire between the Sensor and the Indicator is isconnected or short-circuited. Or the sensitivity of the Sensor has been lost.

4. Digital display - It displays the Concentration of gas on 7 segment display - 3FND

- If the concentration exceeds the point and the value of the concentration is maintained for several seconds, it displays letter GAS and the value of the concentration by rotation. (If the concentration keeps changing, the changing value of concentration is displayed only.)

5. LED dot display - It displays the Concentration of gas on LED dot display

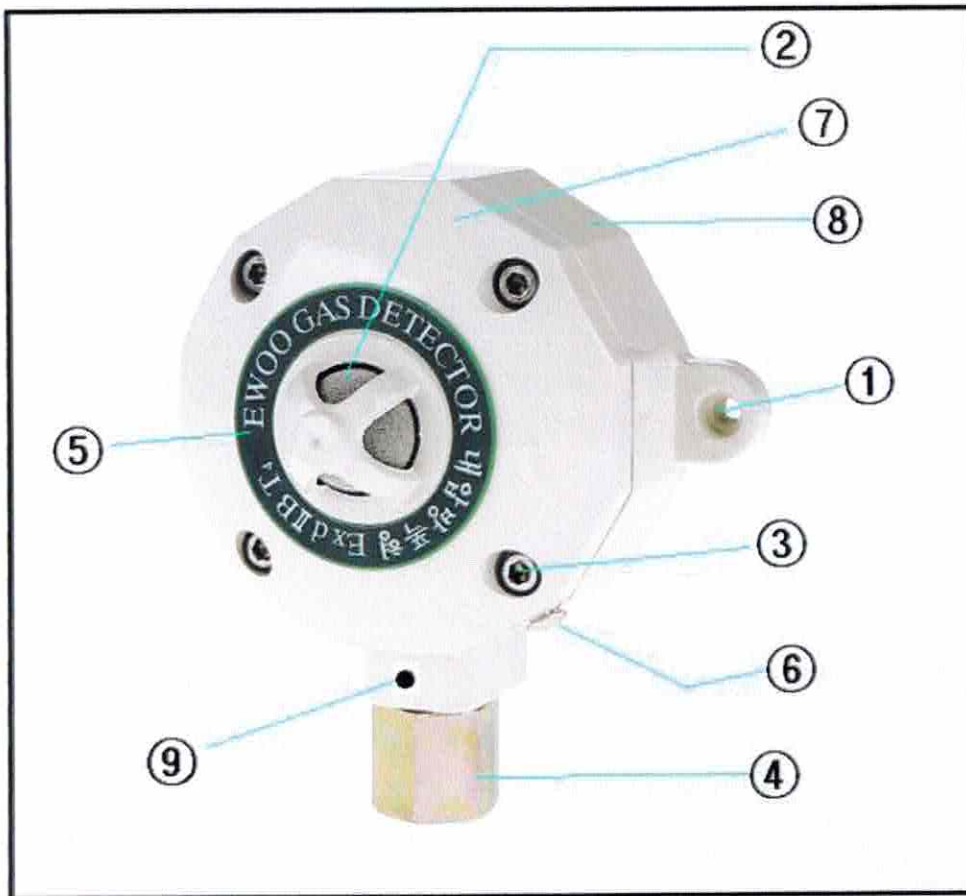
6. Warning light(ALARM)- Yellow LED Blinks when Gas is detected. Eliminated in normal condition.

7. Test button - It allows the user to check the circuit of the UNIT panel. If it is pressed, the concentration of gas increases, as if gas is detected actually. And if the concentration exceeds the alarm point the audible alarm beeps.

8. Alarm mute button - It allows the user to silence the buzzer when it's alarm condition. If pressed one time, buzzer becomes mute. And pressed again, buzzer becomes audible again.

9. Reset button - It allows the user to reset the value of the concentration. But if the Concentration of Gas exceeds Alarm point, the alarm condition is not reset.

## 2-2. SENSOR



### ① Mounting hole

When mounting the detector, you can screw or nail through this hole.

### ② Protecting Filter

This filter protects the sensing device. (Made of sintered bronze, and plated)

### ③ Holding bolts

The cover is bolted to the body by these bolts. (Wrench Bolt M58\*15)

### ④ Conduit entry

- It holds the Pipe or Flexible.

### ⑤ Sticker

### ⑥ Earth terminal

- rounded and cross head screw (M4\*6)

### ⑦ Cover

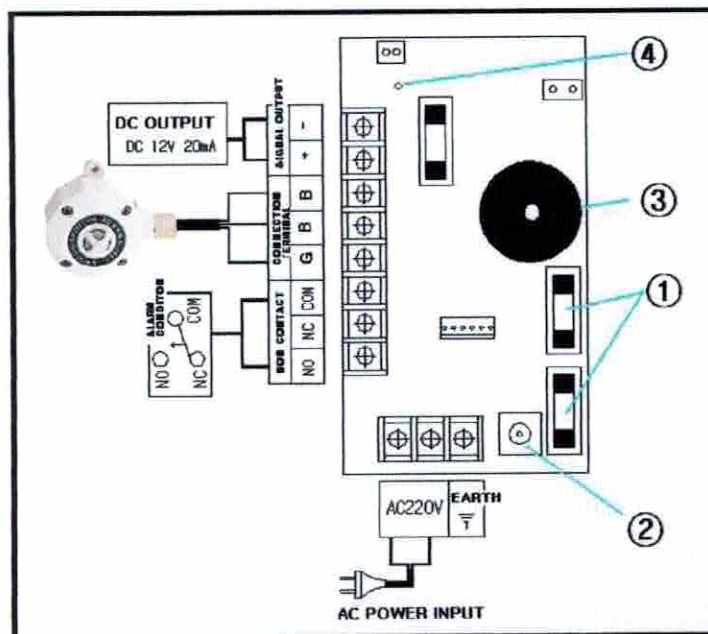
### ⑧ Body

### ⑨ Set screw bolt



### 3. COMPOSITION

#### 3-1. INDICATOR



1. AC FUSE (2EA): 220V, 1A, glass tube  
(When it has blown, Red warning light of the fuse gets lit)
2. Power switch: AC Power supply switch.
3. Buzzer: It makes audible alarm.
4. Warning light of AC fuse: When the AC fuse has blown, Red LED gets lit

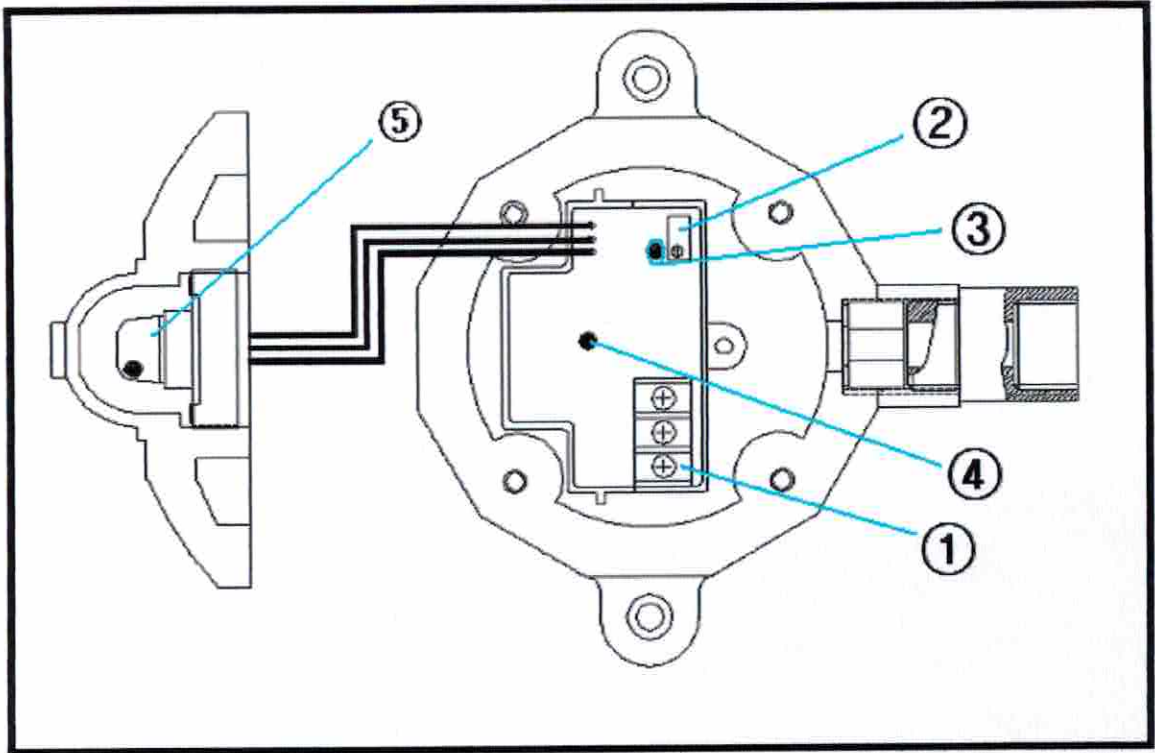
#### WIRING DIAGRAM

1. AC 220V input terminal: Please Connect with rated voltage (AC 220V)
2. Dry contact (NO.NC.COM) – In normal condition, COM terminal is connected with NC terminal. And in alarm condition, COM terminal is connected with NO terminal
3. Sensor connector (terminal block) – Please match the wires with terminals in color

Blue (White) +	Brown (Black)-	Green (Wire of signal)
Power supply of sensor + (DC 24V)	Power supply of sensor - (DC 24V GND)	Output of Sensor (4~20mA)

4. Alarm output terminal – These terminals are used when the Indicator outputs the alarm signal to the Control panel and others. (DC 12V 20mA)

### 3-2. SENSOR



#### ① Connector (terminal block)

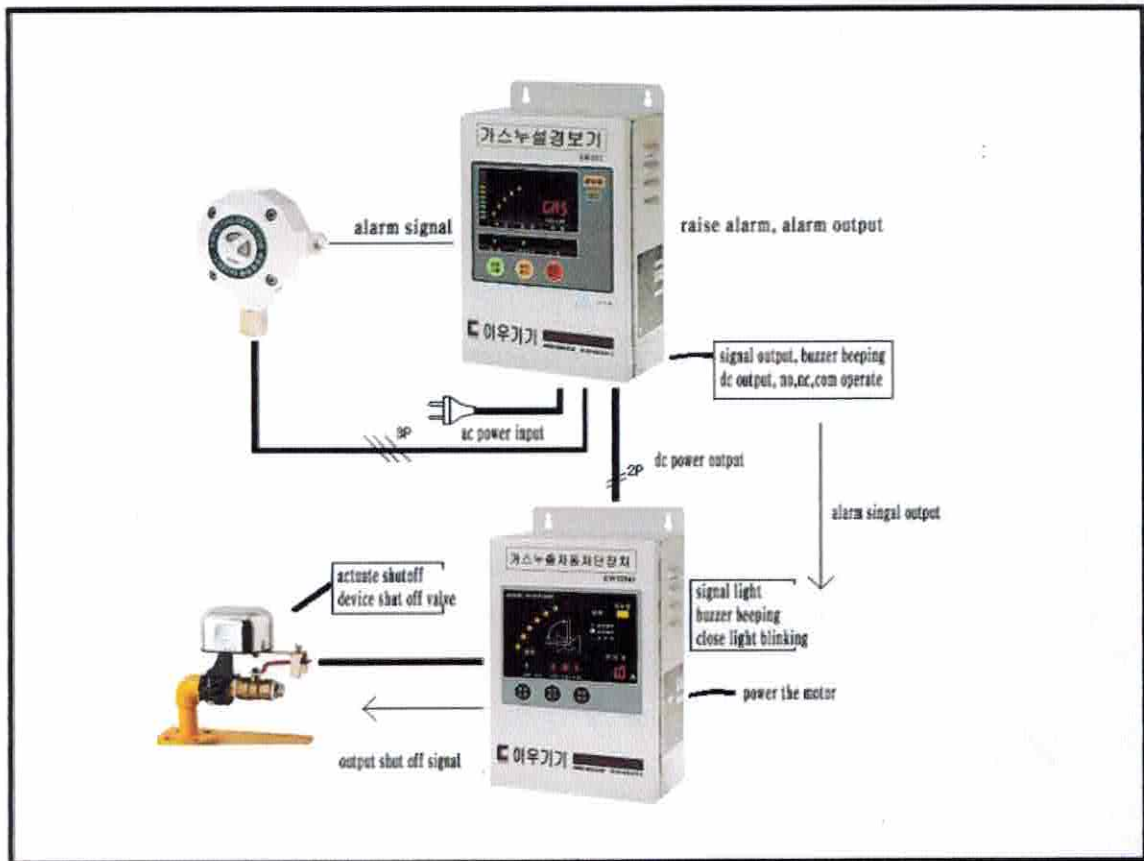
Blue (White) +	Brown (Black)-	Green (Wire of signal)
Power supply of sensor + (DC 24V)	Power supply of sensor - (DC 24V GND)	Output of Sensor (4~20mA)

② Zero Calibration - We release the detector with it being set. Do not attempt to modify.

③ Concentration light - The brightness of Yellow light changes in proportion to the Concentration of Gas (eliminated in normal condition)

④ Power supply light - Green LED is lit while supplied with Power.

#### 4. OPERATIONAL SYSTEM





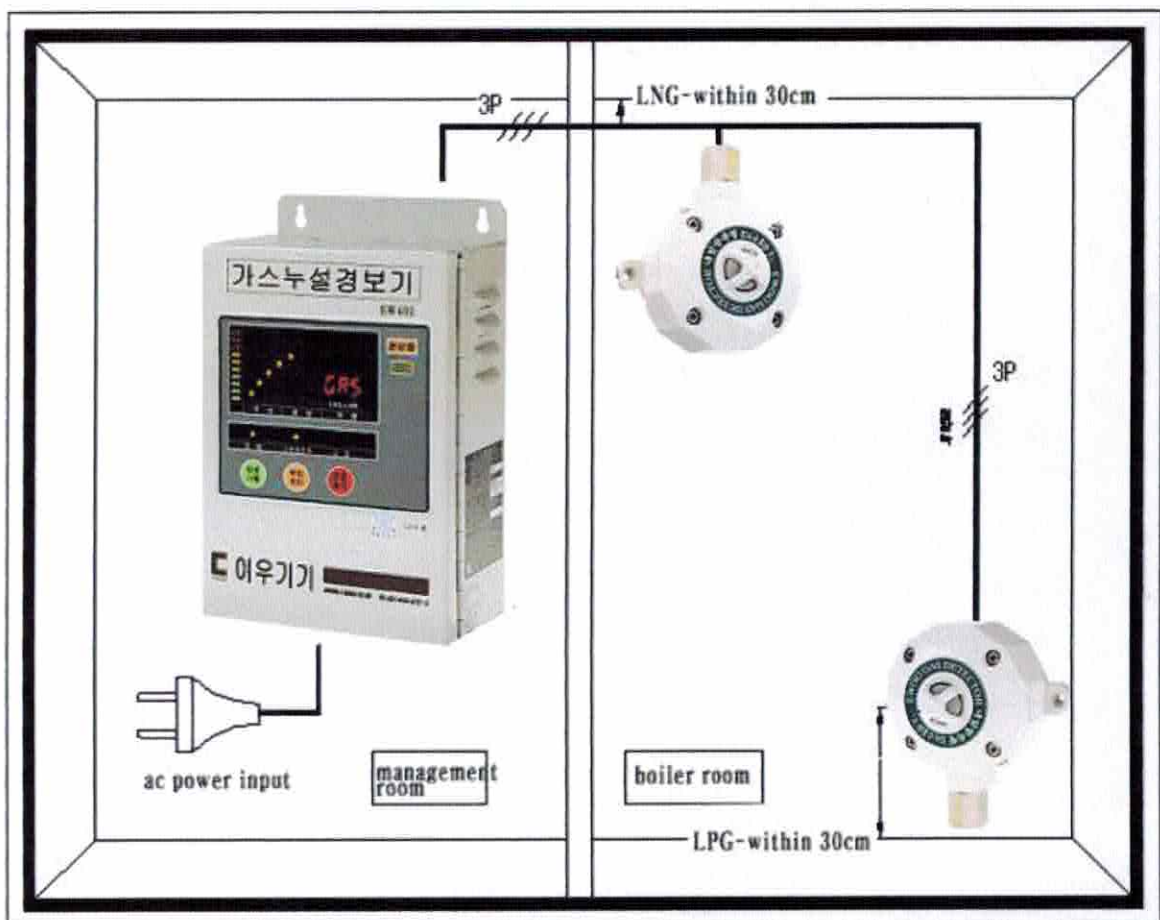
## 5. Installation

### 5-1. WHERE TO INSTALL

1. The detector is designed to be installed in the area that is subject to expose to gas or the area where the leaked gas tend to stay.
2. Please determine the location of the Sensor considering the kind of the gas, cautions and condition.
3. If you are to detect the gas that is heavier than air, Sensor should be mounted at floor or the wall within 30cm from floor. And if you are to detect the gas that is lighter than air, Sensor should be mounted at the ceiling or the wall within 30cm from ceiling. (Plus: Sensor should be farther than 1m and within 4m from the gas appliances)
4. Please install the Detector at the place that the audible alarm is able to be heard so that manager can take follow-up measures.

### 5-2. INSTALLATION DRAWING

※PLACE TO INSTALL: Kitchen, Boiler room, Room of Pressure regulator, Gas storage



## 6. INSTRUCTION & CAUTIONS

### 6-1. INSTRUCTION

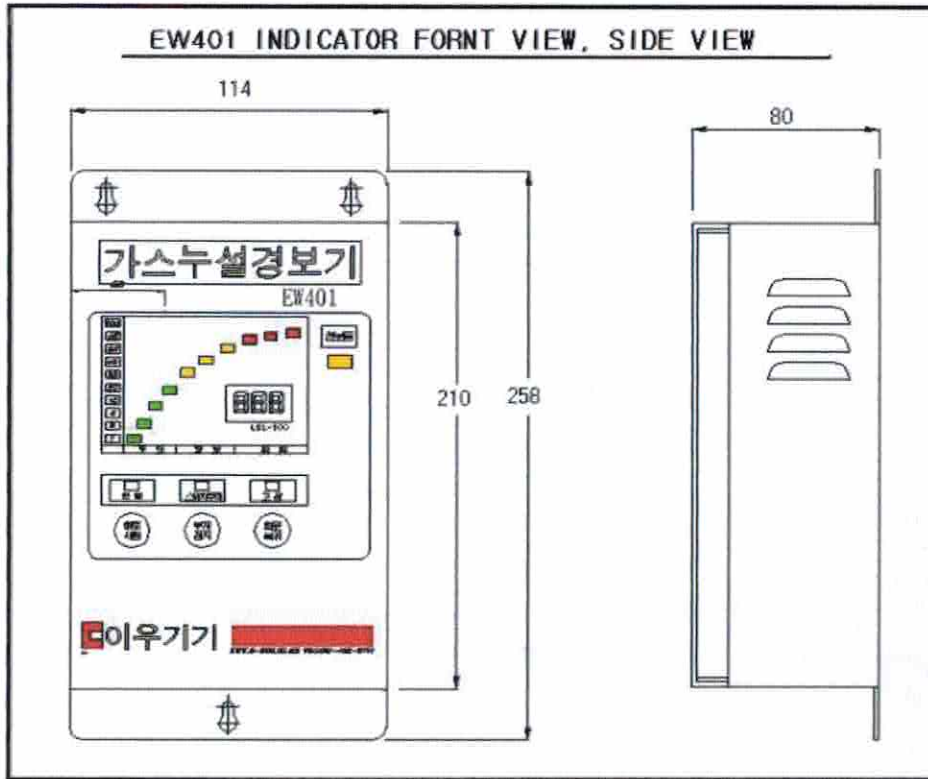
1. Please open the case and connect the Sensor with the Indicator. And connect the AC 220V power supply as well.
2. Please turn on the power supply switch and wait for warmup time (1 minute). In 1 minute, the Detector begins to operate.
3. Fault light (ERROR) on the UNIT panel gets lit when the fuse for the Sensor has blown or the Connection wire between the Sensor and the Indicator is disconnected or short-circuited. Or the sensitivity of the Sensor has been lost.
4. If you are to test the operation of the Detector, please press the Test button on UNIT panel. Then the concentration increases as if gas is detected actually. And if the level exceeds the alarm point, the Detector makes Visual and Audible alarms.
5. If you want to stop the audible alarm, please press the alarm mute button (B/Z STOP). If you do, Alarm mute warning light (B/Z STOP) blinks and the audible alarm becomes mute.
6. When the fault light gets lit, please check the connection between Sensor and Indicator.

## 6-2. CAUTIONS

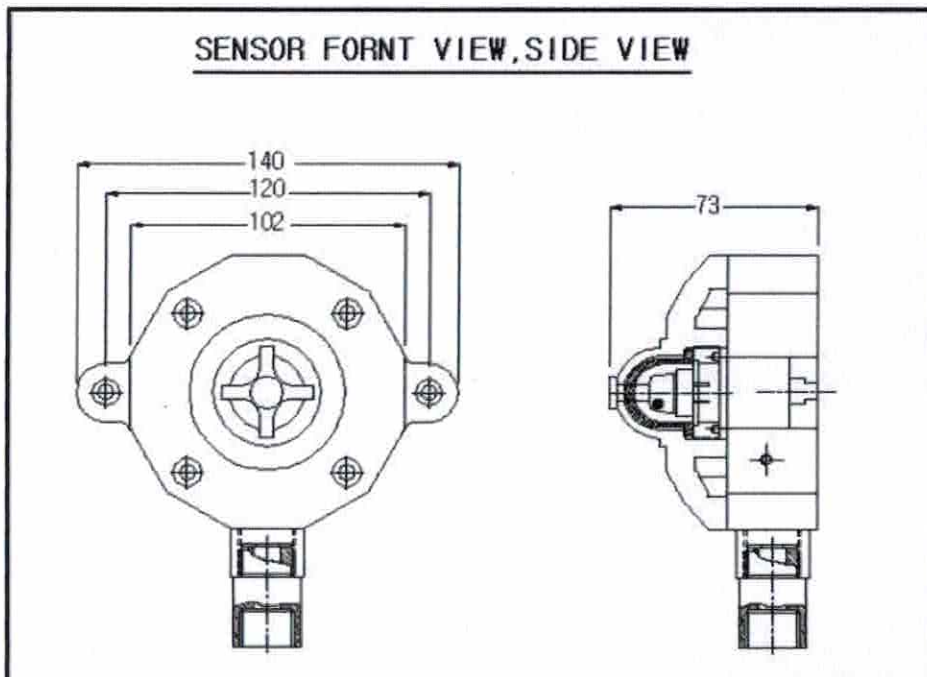
1. Do not attempt to disassemble, repair, remodel or convert.
2. If you purchase the product which has earth terminal, please install an earth wire.
3. Do not touch the power cord or main body with wet hand.
4. Do not disturb the ventilation of the Sensor
5. Be careful not to damage the power cord.
6. Be cautious about using the silicon glue which could affect the Sensor.  
Silicon glue could cause malfunctioning.
7. Please use the rated voltage (AC 220V) written on the product.
8. Do not spray the Sensor directly with air freshener, insecticide, hair spray etc.
9. Please use standard gas when testing.
10. Please connect Indicator with the same Sensor in serial number.
11. Do not use for the gas that is not target one.
12. Please check the sensing device more than once a year.
13. Areas to avoid
  - 1. Near drafts caused by heating, ventilating, fans and doors
  - 2. Near vapor, steam, exhaust gas, dust, strong wind and other gases
  - 3. Areas of high heat and humidity.

## 7. Dimensions

### 7-1. INDICATOR – Front view, Side view



### 7-2. SENSOR – Front view, Side view





User`s Manual

# Gas Leak Alarm and Shut-off Device

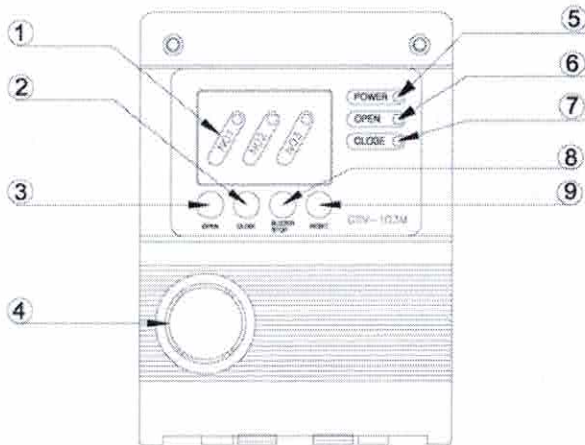
## for industrial

### 1. Introduction

This product is one of the gas safety device which can detect leaked gas and automatic shut-off the gas valve, and composed gas detector, control part, and shut-off part.

Where gas appliances or equipments are installed, there are many parts concerning gas leakage during operating of them. For example, pump, compressor, gaps of operating part, connection part of flange, joint, safety valve, vent stick and drain, etc. It has potential of accidents result from gas leakage. Finally, installation of gas leakage alarm and shut-off device is essential to prevent explosion and poisoning.

### 2. Control Part

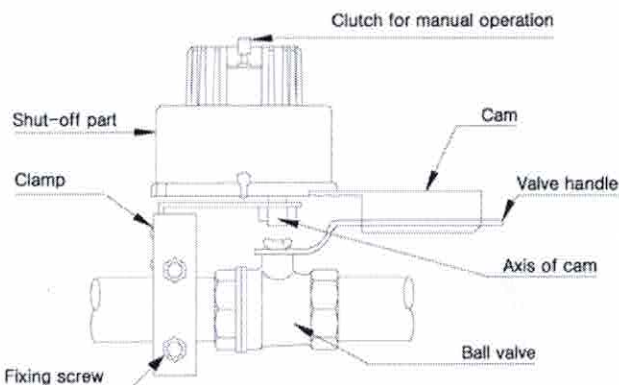


NO.	Part	NO.	Part	NO.	Part
1	Alarm lamps	2	Valve close switch	3	Valve open switch
4	Audible buzzer	5	Power lamp	6	Valve open lamp
7	Valve close lamp	8	Buzzer stop switch	9	Reset switch

### 3. Specifications

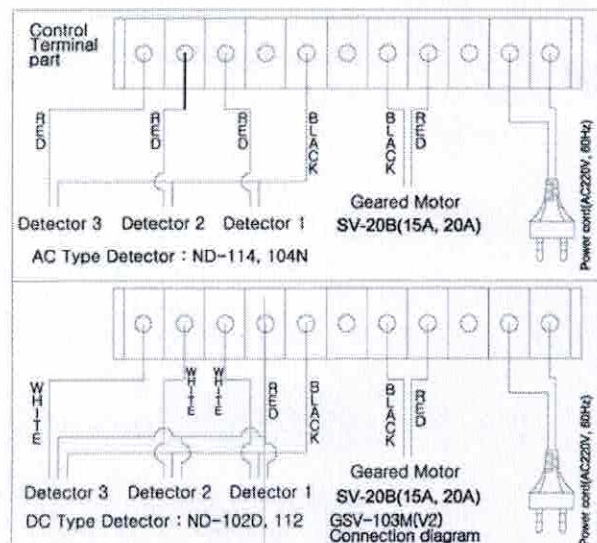
Power	AC 100~240V / 50~60Hz
Channel	1~3 Channel
Output	DC 12V / 500mA ±10%
Power cons	3W
Button	Open/Close/Buzzer stop/Reset
Speed	within 10 seconds
Type	Remote and manual operation
Shut-off	SV-20A, 25A SV-20B, SV-20H
Temp	-20°C~50°C, Max 95%(RH)
Dimension	126(W) X 173(H) X 72(D)
Option	DC 15V Output or contact(NC, NO, COM)
Weight	383

### 4. Installation of Shut-off part



Installation method	1. Put a shut-off part on the valve handle. 2. Put the clamp on the pipe, then fix by screw. In case of 15A pipe, please use support clamp.
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### 5. Connection drawings





## 6. Installation Location

### 1. Detector

- Gas leak detector, depending on the type of gas used has a different installation location, than the type of gas used to install it.
- 1m or more in gas appliances within 4m(horizontal distance) will be install on interior walls.
- Exhaust, Ventilator, Do not be a great place to install ventilation.

### 2. Control part

- Installed in locations convenient to use
- Are installed in a location where you can easily manipulate.

### 3. Shut-off part

- pipping valve in Shut-off the Installaion.

## 7. Connection of detection,

### Control and shut-off parts

- GSV-103M is able to interlock with up to 3 detection parts
- Please open the front door of control part, and then connect to the terminals.
- Please prepare enough the wire for connection of control and shut-off parts, and control and detection parts
- Please connect the signal wire from detection part to terminals of control part
- Please confirm of polarity, +(red) and -(black)
- Final confirm of operating status

## 8. Operation method

- Open and close operating by open/close switch alternately with turning direction lamp.
- In case of detection of applicable gases(using test gas), alarm lamp will be light on with audible sound, and shut-off part will be closed with closing direction lamp.
- For audible sound stop, please push the buzzer stop switch.
- After stop of audible alarm sound, please reset and valve open by pushing switches, respectively.

## 9. Ordinary inspection

- Please make sure audible alarm, shut-off operation and closing, direction turning lamp by test gas injection to detection part.
- Please confirm audible sound stop by buzzer stop switch.
- Please make sure reset operation by reset and opening switches.

## Cautions for Safety

This is very important for safety, please read specifically and do not forgetful. It is classied 2 grade for danger, warning and caution as followings.

**Warning** This remark has potential for severe injury or death.

**Caution** This remark has potential for injury or property damage.

### Warning

**Warning** Do not disassemble, reconstruction and repairing except manufacturer engineer. It is able to injury due to electric shock, firing or unusual operation.

**Warning** Earth wire has to be grounded. Electric shock can be occurred by electric leakage.

**Warning** Do not touch power code or device with wet hand. Electric shock can be occurred.

### Caution

**Caution** Do not make witness of device. It is causeof breakdown.

**Caution** Do not impact, drop or throw.

**Caution** Do not cover detection or receiving parts.

**Caution** Take off power code with holdong plug.

**Caution** Do not use at humid or dusty place.

**Caution** Do not make injury of power code.

**Caution** Do not use silicon included adhesives near by detection part.

**Caution** Rated voltage is sure to be input as power.

**Caution** Do not spray any sort of the aromatic liquid and insecticide on it. (Product life will be shorten due to chemicals, and alarm will be occurred by LPG included them)

**Caution** Use standard gas for operating test.

## Warranty on Product

Product	Gas detector	
Model		Self-inspection
Product No.		
Purchase data		
Term of warranty		
Customer	Name	
	Address	
	Telephone	

Agent	Firm name	
	Address	
	Telephone	

this product passed the test and inspection based on SHinwoo quality Control. During the term of warranty, if the products have something wrong in normal usage condition, customer can request repairs free of chage.

- ◆ If the products have something wrong, confirm the usage directions again, and then contact to agent or A/S center.
- ◆ If the products have something wrong in normal usage conditions during the term of warranty, for 3 year from purchasing date, there will be after service free of charge. In case of followings, there will be charge for service (parts, technical, or travelling fees).
  - In case of expiration over the term of warranty
  - In case of product trouble due to customer's carelessness or intention
  - In case of product trouble due to a natural disaster.
  - In case of repairing or reconstruction without by our service man.
  - In case of product trouble due to moving.
- ◆ The warrantis with normal operation are 5 and 3year for household and industrial, respectively, Wheveas, with severes are 3 and 2 years for the same. (The terms of usable in severe usage surroundings are shorter than normal ones)
  - Manufacturer has no responsibility for the products expired over the terms of usable.
  - Ask the periodic inspection to out A/S center or the organs of concerned followings.