

Fixed Gas Detector SI-100D



⚠ WARNING

Read this manual carefully before using the instrument. The instrument will perform as designed only if it is used and maintained in accordance with the manufacturer's instruction. Otherwise, it could fail to perform as designed and persons who rely on this instrument for their safety could sustain serious personal injury or death.

This manual contains operating instructions for stationary gas monitoring instruments designed for area air quality and safety applications, and should be **STUDIED CAREFULLY** by all persons responsible for the operation and maintenance of the instruments. All SENKO equipment described herein is designed or manufactured for use only as set forth herein and by the labels affixed, or other literature accompanying the product.

Where **WARNINGS** or **CAUTIONS** are herein set forth, they must be followed. If SENKO equipment is used in a manner or under conditions not specifically authorized or prescribed by this manual, or by other materials or written instructions either accompanying the product or authorized by SENKO in writing, or if it is used or maintained by unqualified or improperly trained personnel, SENKO Co., Ltd. disclaims all responsibility of every kind for said equipment. **While basic connection installation instructions are included, all equipment must be installed by qualified electricians** FOLLOWING ALL ASPECTS OF THE LOCAL CODE REQUIREMENTS. Also, the instruments must be calibrated and alarms tested periodically by trained personnel for proper functioning of the instruments.

CAUTION: The overall system, especially where gas monitoring sensors are used, must be **CALIBRATED BY QUALIFIED PERSONNEL**. Thereafter, a monthly calibration check is recommended to assure reliability and accuracy.

Please call the factory if any problems are encountered.

WARRANTY

SENKO sensors and instruments are designed for area air quality and safety applications. SENKO gas monitoring instruments are provided with a one year warranty. This warranty covers only defective parts or workmanship in normal use and service. Instruments which fail to function due to factory defect

within one year of date of shipment are to be returned to SENKO for warranty repair.

SENKO will determine the nature and responsibility for the defect. In all cases the warranty is limited to the original cost of the equipment. Any misuse of equipment is the customers responsibility. SENKO will either repair or replace (at SENKO's option) returned instruments subject to the warranty, at no charge. No field service is included in this warranty. For field service requirements please contact SENKO.

This warranty is voided by:

1. Improper application of instrument.
2. Misuse of instrument.
3. Intentional or accidental damaging of instrument.
4. Not returning the sensor to factory for warranty validation.

For any queries regarding warranty repair or replacements, please include the instrument model and serial number in any transmittals to SENKO. SENKO instruments are supplied with operating and installation manuals and other literature. These are the only source of specific details regarding proper operation and maintenance of the equipment. These instructions must be carefully read and the precautions followed in detail. Instruments must be calibrated and alarms checked periodically to

assure proper equipment operation. Please refer to the manual for details.

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-1-

Table of contents

Product introduction	3
1. Description	4
2. Sensor specification	5
3. Electric wiring	5
4. Calibration	6
5. Notice for user	7
6. Drawing	8

Introduction



:: Features

- Simple structure, reasonable price
- Ease of Installation
- Long distance communication with 4~20mA analog output
- can be used with present any indicators and PLC using analog
- Explosion proof structure (Ex d IIB T4)

:: Specification

모델명	SI-100D
Detecting Method	Diffusion Type
Detecting Gas	Combustible Gas
Sensor Type	Catalytic
Detecting Range	0~100% LEL
Accuracy	± 3% / Full Scale#
Output signal	4-20mA
Telemetry line length	Analog output MAX. 2,500m
Operating temp. & Humi.	-20°C ~ +60°C, 5~95% RH (Non-condensing)
Power	24V DC (Consumption ≤ 2.0W, 80mA@24V.DC)
Dimensions	93(W) X 106(H) X 89(D)mm, Weight:0.6kg
Explosion Proof	Ex d IIB T4

1. Description

Instrument Overview



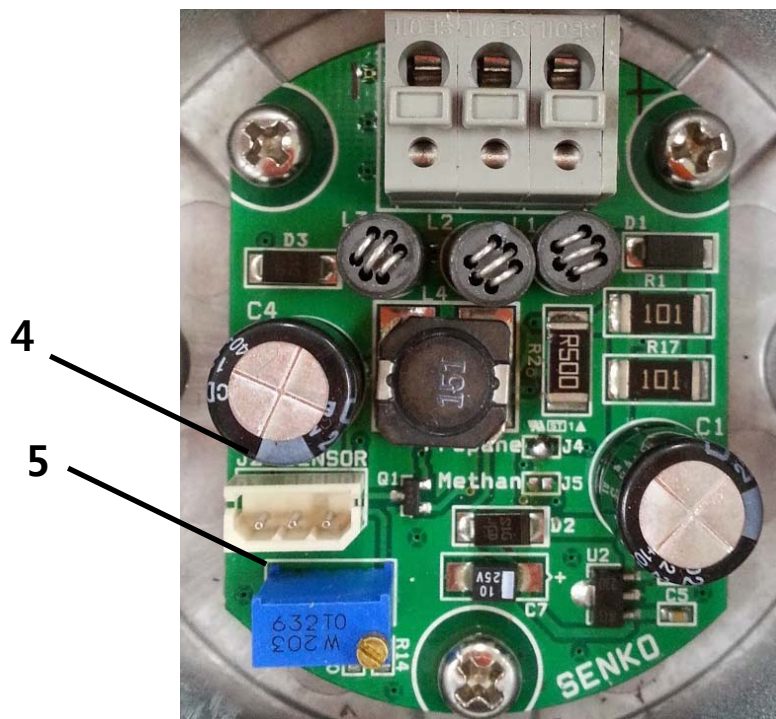
1. Sensor
2. Bolt of top case
3. Inlet for cable (PF1/2")
4. Part for installation of the detector
5. For grounding

2. Sensor Specification

Sensor	Range	Span Gas	Model	Origin
Combustible	0~100%LEL	25%LEL	NAP-55A	Japan
LPG	0.05~1.8%	0.45%(isobutene)	NAP-55A	Japan
LNG	0.05~5.0%	1.25%(CH ₄)	NAP-55A	Japan

3. Electrical Wiring

2 3 1



PIN	Wire	Color
1	Power (+), 24V DC	Brown
2	Power (-)	Blue
3	4~20mA Output	Green
4	Connection part for sensor cable	White
5	Volume for calibration	Blue

4. Calibration

① Span calibration

You can calibrate the detector through volume part(No. 5) of pcb board to refer to page 5.

Please set output of the detector as 8mA touching No. 2 and No.3 terminal with a tester after stabilizing output of sensor for 30 to 60 sec. after inserting standard gas 25LEL% of Methane to the sensor part of the detector.

⚠ WARNING

Do not Fresh Air Calibration unless you are certain you are in fresh, uncontaminated air; otherwise, inaccurate readings can occur which can falsely indicate that a hazardous atmosphere is safe. If you have any doubts as to the quality of the surrounding air, do not use the Fresh Air Calibration feature. The calibration check is required to verify span accuracy. Failure to follow this warning can result in serious personal injury or death.

⚠ WARNING

If the LOW or HIGH alarm activates, leave the contaminated area immediately; the ambient gas concentration has reached the preset LOW or HIGH alarm level. Failure to follow this warning will cause over-exposure to toxic gases and persons relying on this product for their safety could sustain serious personal injury or death.

NOTICE

We recommend calibration once every six months, at least once a year. Sensor's output going down as time goes by; measurement error will increase. Calibration is crucial for the sensor performance and persons relying on this product for their safety.

5. Notice for user

AFTER DE-ENERGIZING,OPENING

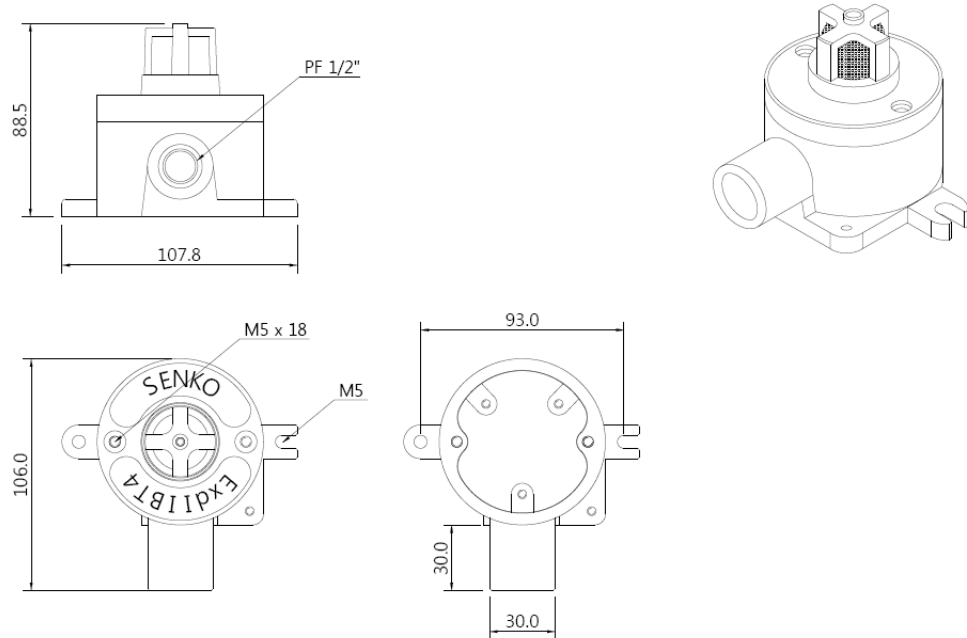
DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

DO NOT OPEN WHEN ENERGIZED

SEPARATE ONLY IN A NON-HAZARDOUS AREA)

6. Drawing

GAS DETECTOR SI-100D



1. SI-100D is basically for indoor use. You need to install additionally rain cover to protect the detector from rain if you want to install the instrument outdoor.
2. Install the detector to the location within 30cm from the bottom
(If heavier gas than air, e.g. LPG)

Install the detector to the location within 30cm from the ceiling
(If lighter gas than air, e.g. LNG)

3. Make sure that you have to use cable glands(explosion proof) or Sealing fitting (explosion-proof construction for internal pressure) to prevent inflow of external gases if you want to install the detector in explosion district.
4. SI-100D can be used with present any indicators and PLC using analog output (4-20mA)