

## Gas sensor module

### FIS3091-99NC-01/03

### FIS3091-99C4-01/03

FIS3091-99\*\*-01/03 gas sensor module is a product that incorporates a semiconductor gas sensor into the control circuit. The drive control of gas sensor and output signal processing are performed by the microcomputer program.



Without case (NC type)



With case (C4 type)

### Features

- **High quality and high reliability**

The mounted semiconductor SB-type gas sensor developed by our company features high sensitivity, quick response, and excellent durability.

- **No need for calibration**

The calibration with detection gas is already carried out at our factory. Therefore, you can use it as soon as the module is delivered to you.

- **Easy installation in your device**

Our module is compact, lightweight, and easy to take out the output signal. You can incorporate our module into your device easily.

- **Can be used under severe environment/condition**

You can choose module with or without case. Module with case has water-proof function, so that you can use under severe environment e.g. outside, inside of refrigerator etc.

- **Various output specifications**

- Alarm output : 1 or 2 point(s) can be set.
- Concentration output is included within serial signal.
- Malfunction output : Sensor failure, circuit failure, various gas or silicone poisoning can be detected.

Item	Specifications	
	Without case (NC type)	With case (C4 type)
Part No.	FIS3091-99NC-01/03	FIS3091-99C4-01/03
Mounted gas sensor	SB-53	
Target gas	Ammonia	
Alarm response	Within 30 seconds	
Power supply	5.0V DC $\pm$ 5%	
Alarm output	CMOS, LED	Open collector, LED
Alarm concentration	Ammonia:100 ppm, 300 ppm (Hysteresis : 70 %)	
Malfunction output	CMOS, LED	Open collector, LED
Concentration output	Included (serial output)	
Average power consumption	35 mA	
Operating temperature range	-10~50 °C (no condensation)	
Storage temperature range	-40~60 °C (no condensation)	
Dimension	28 x 41 x 20(H) mm	31 x 44 x 20(H) mm
Weight	5 g	19 g

Connector pins specifications																	
<table border="1"> <thead> <tr> <th>PIN #</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>DC5.0 V<math>\pm</math>5 %</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>Malfunction output NC type : CMOS output C4 type : Open collector</td> </tr> <tr> <td>4</td> <td>1st alarm output NC type : CMOS output C4 type : Open collector</td> </tr> <tr> <td>5</td> <td>2nd alarm output NC type : CMOS output C4 type : Open collector</td> </tr> <tr> <td>6</td> <td>Concentration output (Serial signal)</td> </tr> <tr> <td>7-10</td> <td>—</td> </tr> </tbody> </table>	PIN #	Specification	1	DC5.0 V $\pm$ 5 %	2	GND	3	Malfunction output NC type : CMOS output C4 type : Open collector	4	1st alarm output NC type : CMOS output C4 type : Open collector	5	2nd alarm output NC type : CMOS output C4 type : Open collector	6	Concentration output (Serial signal)	7-10	—	<p><b>■ Evaluation method</b></p> <ol style="list-style-type: none"> <li>1. Apply the power supply voltage with pin 1 as DC5V and pin 2 as GND.</li> <li>2. Wait for about 7 seconds until the initial warm-up operation is completed. (Green LED blinks)</li> <li>3. When the gas concentration exceeds the alarm level, the alarm output turns ON (LED blinks) and automatically canceled when the gas concentration gets decreased.</li> <li>4. When you finish the measurement, turn off the input voltage.</li> </ol> <p><b>■ Notes on evaluation</b></p> <ul style="list-style-type: none"> <li>● During operation, the sensor failure is always observed. In case of failure, the LED (red) and LED (green) will blink alternately at 0.25 second intervals, and if the sensor returns to normal, LED will switch itself off automatically.</li> <li>● There is no regulation on the mounting direction of the product.</li> <li>● Do not spray high-concentrated gas directly on the gas sensor.</li> <li>● Avoid storage or use near silicon or organic solvents.</li> </ul>
PIN #	Specification																
1	DC5.0 V $\pm$ 5 %																
2	GND																
3	Malfunction output NC type : CMOS output C4 type : Open collector																
4	1st alarm output NC type : CMOS output C4 type : Open collector																
5	2nd alarm output NC type : CMOS output C4 type : Open collector																
6	Concentration output (Serial signal)																
7-10	—																

Please contact

Dec.2021 Revised

In the interest of continued product improvement, we reserve the right to change design features without prior notice.

 Nissha FIS, Inc.  
 2-4-28, Tagawa  
 Yodogawa, Osaka  
 532-0027 Japan

 Tel: +81 6-7176-3911  
 Fax: +81 6-7176-3912  
<http://www.fisinc.co.jp>