

IR-93S-04/100

Gas sensor module

for CARBON DIOXIDE

IR-93S-04/100

IR-93S-04/100 is a Dual Beam NDIR CO₂ sensor which can accurately detect carbon dioxide between 400 to 5,000 ppm.

This sensor is suitable for applications in Indoor Air Quality (IAQ), Automotive, HVAC, and others.



Features

- No false alarm
- Easy connection
- High accuracy
- No onsite re-calibration required
- Maintenance free

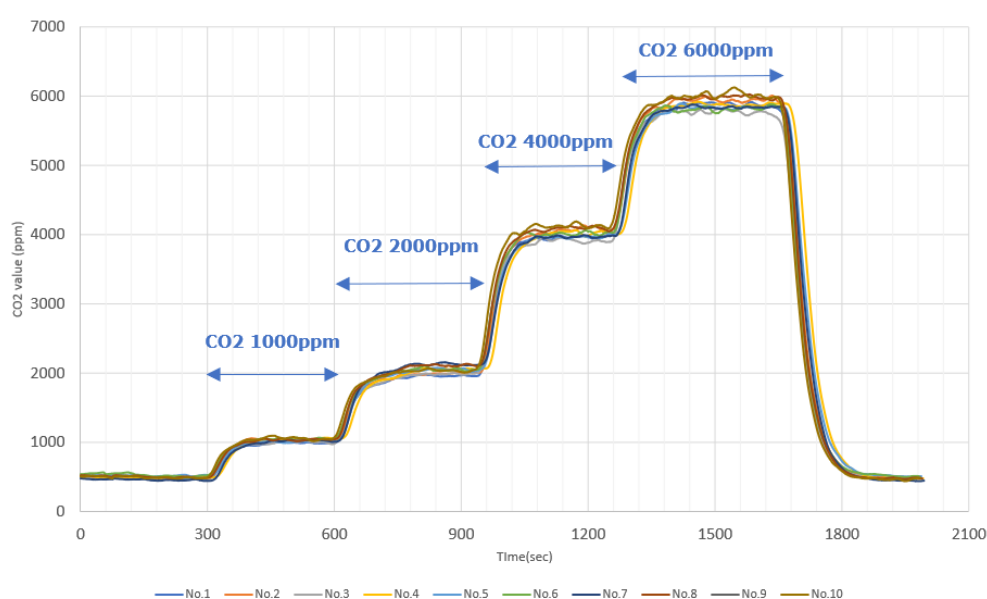


Fig1. Gas response

Specifications: IR-93S-04/100

Item	Specifications
Measurement method	Single light source dual wavelength type sensor (Non-dispersive-Infrared)
Detection concentration range	400 to 5,000 ppm of CO ₂
Accuracy	±(50ppm +5% of Reading value)
Response time	Within 1 minute (T90)
Output	PWM, UART
Detection cycle	every 2 second detection
Power supply	5 VDC±10%
Current consumption	Average 70mA、(Peak 300mA)
Warm up time	14sec
Operating temperature and humidity range	-20~+70°C <90%RH (no condensation)
Storage temperature range	-20~+85°C <90%RH (no condensation)
Dimensions	64 (W) × 23 (D) × 10.7 (H)mm
Weight	13g

Connector pins specifications	Contents																																												
<table border="1"> <thead> <tr> <th>Pin No.</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>TXD UART</td> </tr> <tr> <td>2</td> <td>RXD UART</td> </tr> <tr> <td>3</td> <td>Power supply 5 VDC±10%</td> </tr> <tr> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>PWM output</td> </tr> </tbody> </table>	Pin No.	Specification	1	TXD UART	2	RXD UART	3	Power supply 5 VDC±10%	4	GND	5	PWM output	<p>■Evaluation method</p> <ol style="list-style-type: none"> This sensor also outputs the gas concentration serial signal with UART. Transmitting protocol: 19200bps, 8bit, none parity, stop bits 1, no flow control, 0 to 5V DC, ASCII, Active Hi If concentration should be uploaded automatically in ASCII, following is the format. <table border="1"> <tr> <td>32</td><td>32</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td><td>32</td><td>p</td><td>p</td><td>m</td><td>/r</td><td>/n</td> </tr> </table> <p>32 is the ASCII code of blank space. UART data ends with newline code.</p> <p>For example : output of 1000ppm</p> <table border="1"> <tr> <td></td><td></td><td>1</td><td>0</td><td>0</td><td>0</td><td></td><td>p</td><td>p</td><td>m</td><td>/r</td><td>/n</td> </tr> </table> <p>0x20,0x20,0x31,0x30,0x30,0x30,0x20,0x70,0x70,0x6d,0x0D,0x0A</p> <p>For example : output of Error</p> <table border="1"> <tr> <td>E</td><td>r</td><td>r</td><td>o</td><td>r</td><td>/r</td><td>/n</td> </tr> </table> <p>0x45,0x72,0x72,0x6F,0x72,0x0D,0x0A</p>	32	32	x	x	x	x	x	32	p	p	m	/r	/n			1	0	0	0		p	p	m	/r	/n	E	r	r	o	r	/r	/n
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Dec.2021 Revised

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

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E_IR-93S series