

PROZA ELECTRONIC TECHNOLOGIES

- OEM pressure sensor, pressure transmitters, melt pressure transmitters
 - Intelligent pressure transmitters, differential pressure transmitters
 - Hydraulic level transmitters
 - Temperature sensors
 - Load cells, load pins, force transducers
 - Metal foil strain gauges, semiconductor strain gauges
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User Manual of PZGA10 Intelligent Infrared Carbon Dioxide Module

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Statement

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Thanks for purchasing our product. In order to enable customers to better use the product and reduce the faults caused by misuse, please read the manual carefully and operate it correctly in accordance with the instructions. If users disobey the terms or remove, disassemble, change the components inside of the sensor, we shall not be responsible for the loss.

We are devoting ourselves to products development and technical innovation, so we reserve the right to improve the products without notice. Please confirm it is the valid version before using this manual. At the same time, users' comments on optimized using way are welcome.

Please keep the manual properly, in order to get help if you have questions during the usage in the future.

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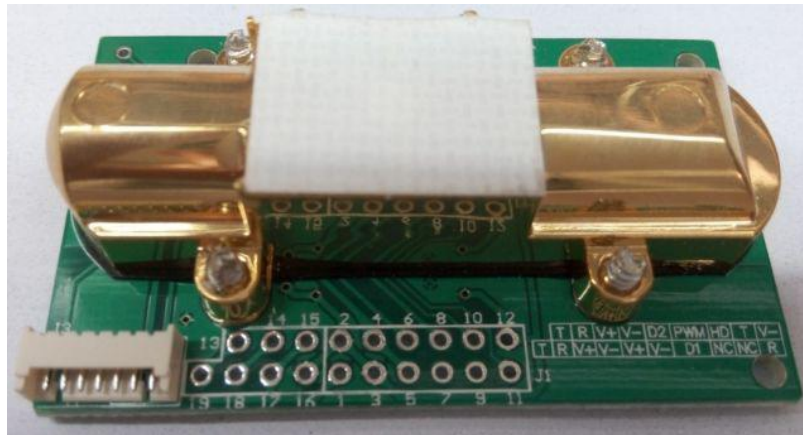
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1. Introduction:



PZGA10 is one of the general NDIR CO₂ gas modules, which adopting NDIR principle, consists of carefully designed light chamber, precise electric circuit and intelligent software. With the help of single light source, single channel detector, and microprocessor, PZGA can perform the gas concentration signal in different ways. In this product, temperature compensation has been realized as well as the revision of the nonlinear relationship. It has all the advantages from NDIR products, such as good selectivity, high sensitivity, long life and independence to O₂.

2. Applications:

- HVAC refrigeration equipment
- Air quality monitoring equipment
- Fresh air system,
- Air purification equipment,
- Smart home and schools

3. Main functions and features:

- Gold-plated chamber, waterproof & anti-corrosion treatment
- High sensitivity, Low power consumption
- Good stability
- Temperature compensation, excellent linear output
- Output modes: UART, analogue voltage signal, PWM wave
- Long lifespan
- Anti-water vapor interference
- No poisoning

4. Specifications:

Parameter	Data
Working voltage	4.5 V ~ 5.5V DC
Average current	< 60 mA(@5V input)

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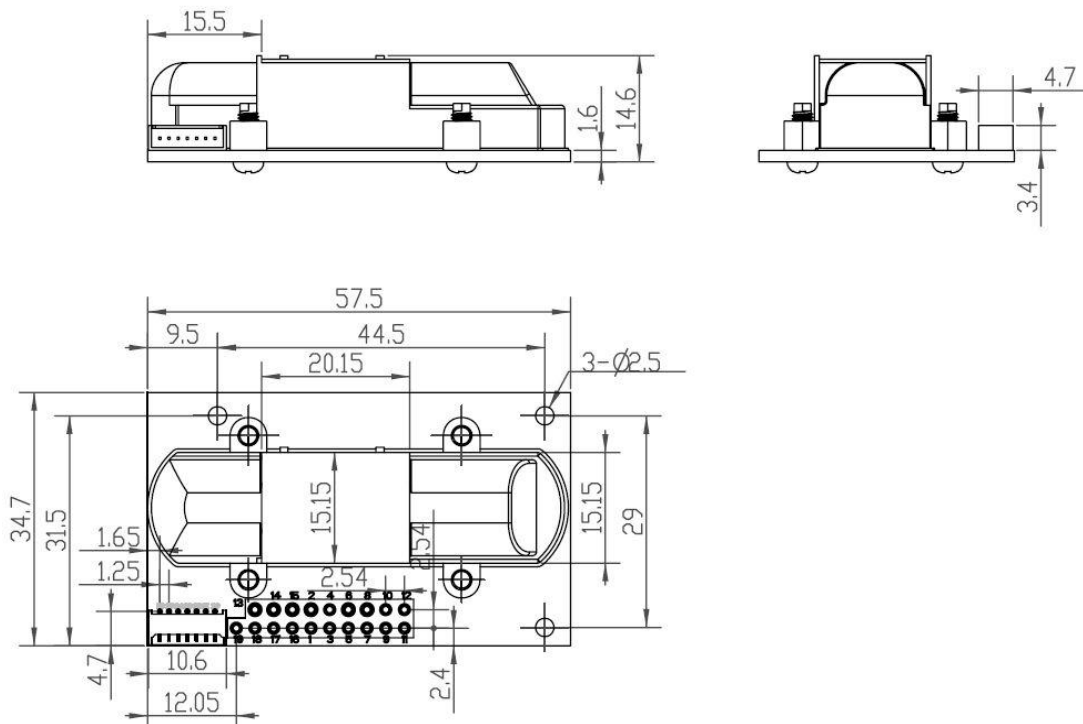
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Peak current	150 mA(@5V input)
Interface level	3.3 V (5V compatible)
Measuring range	0~10000ppm optional (refer to table 2)
Output signal	Serial Port (UART, TTL level)
	PWM
	Analog output(DAC), 0.4-2V
Preheat time	3min
Response Time	T90 < 120s
Working temperature	0°C ~ 50°C
Working humidity	0~90%RH (no condensation)
Weight	15 g
Lifespan	>5 year

Target Gas	Measuring Range	Accuracy
Carbon Dioxide (CO2)	0~2000ppm	±(50ppm+3%reading value)
	0~5000ppm	
	0~10000ppm	±10% reading value

5. Dimensions:



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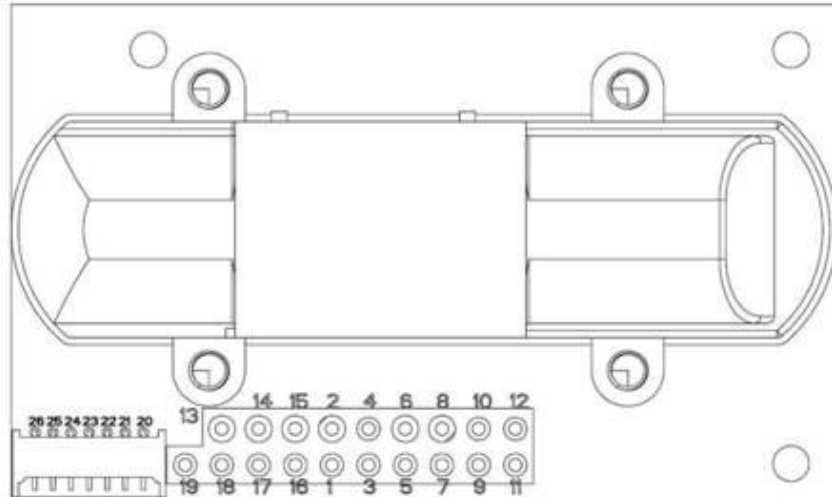
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6. Definition for pins:



PIN	Description
Pad1/Pad15/Pad17/Pad23	Vin Voltage Input
Pad2/Pad3/ Pad12/Pad16/Pad22	GND
Pad4/Pad21	Analog Output (0.4~2V)
Pad6/Pad26	PWM
Pad8/Pad20	HD (Zero calibration, low level for more than 7 seconds valid)
Pad7/Pad9	NC
Pad11/Pad14/Pad18/Pad24	UART (RXD) TTL Level input
Pad10/Pad13/Pad19/Pad25	UART (TXD) TTL Level output

7. Automatic Baseline Correction (ABC function):

ABC function refers to that sensor itself do zero point judgment and automatic calibration procedure intelligently after a continuous operation period. The automatic calibration cycle is every 24 hours after powered on. The zero point of automatic calibration is 400ppm. From July 2015, the default setting is with built-in automatic calibration function. To use the sensor better, the sensor must be placed in clean air for over 1 hour.

ABC function is suitable for office and home environment etc..., but not for green house, farms, and refrigerators etc..., in which it requires to shut down the automatic calibration function. Then the user should do zero detection regularly, and zero calibration by command or manually.

8. Notes:

8.1 Please avoid the pressure of its gilded plastic chamber from any direction, during welding, installation, and use.

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- 8.2 When placed in small space, the space should be well ventilated, especially for diffusion window.
- 8.3 The sensor should be away from heat, and avoid direct sunlight or other heat radiation.
- 8.4 Do not use the sensor in the high dusty environment for long time.
- 8.5 To ensure the normal work, the power supply must be among 4.5V~5.5V DC rang, the power current must be not less than 150mA. Out of this range, it will result in the failure of the sensor. (The concentration output is low, or the sensor can not work normally.)
- 8.6 During the zero point calibration procedure by manual, the sensor must work in stable gas environment (400ppm) for over 20 minutes. Connect the HD pin to low level (0V) for over 7 seconds.

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