• Description

IRM300 is a general infrared CO2 sensor module formed using the NDIR infrared absorption detection principle.

• Product Features

High sensitivity

Temperature compensation, excellent linear output

Excellent stability

Long life

Resistant to water vapor interference without poisoning

Independence to O2

Low power consumption

Excellent selectivity

Customizable

• Environmental

Working temperature: 0 ℃ ~ 50 ℃

Storage temperature : -40 ℃ ~ 70 ℃

Working humidity: 0 ~ 90 %RH (no-condensing)

• Performance characteristics

Range: 0~5000ppm(Max:50000ppm)

Detection accuracy: ±50ppm±5% of reading

Response time(T90): ≤ 90 s

No self-calibration

Life: 15years

• Electrical characteristics

Voltage: 5V±0.5

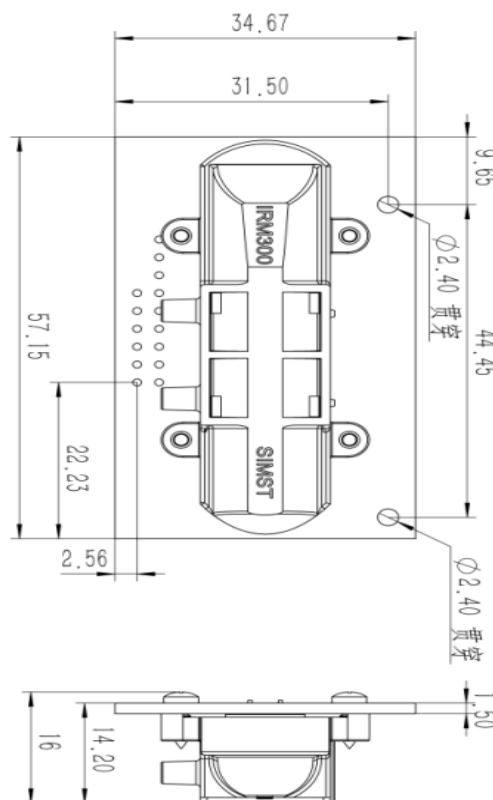Vurrent: Imax=160mA ; Ipeak130mA

Warm-up time: 120S

• Signal output

Analog voltage

UART , PWM

IIC

• Installation Instructions

The sensor is installed with a positioning hole spacing of 44.45mm. Wiring socket spacing 2.54 mm. The module cannot work in dusty environment for a long time.Supply power should be in is proper range.

• Product Dimensions

All dimensions in mm
All tolerances ±0.2mm unless otherwise stated

Note

All the above performance parameters are measured in a standard test environment.

Contact us for more details

Website: www.semeatech.com
Address: 39,Valley View Irvine,CA 92612 Orange,USA
Tel: +1-949-683-2886 Email:info_us@semeatech.com

Page1 **REV.: 2017/05**

• Protocol

1、UART Protocol

Baud rate：19200bps，8 bytes，first byte is stop，no check byte Concentration READ and RETURN in HEX code Zero calibration and SPAN calibration in ASCII，the byte of each frame is not steady, and which start from 0x32, and end in 0x21.

2、IIC Protocol

3、PWM Output

PIN 8 is the PWM output, definition is: Concentration range: 0-10000ppm CO2

Cycle: 1000.0ms ±2%   High level output of initial period: 0.1ms (nominally)
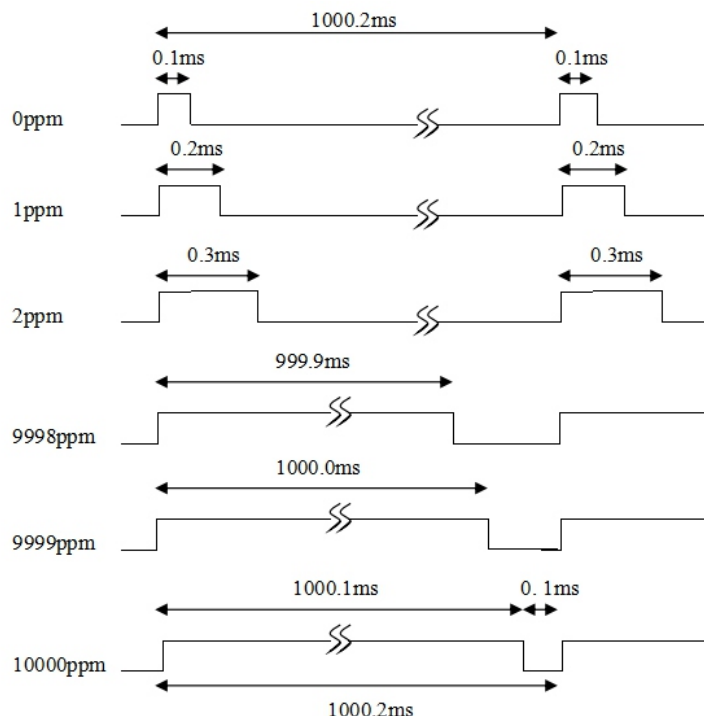
Central period: 1002.0ms ±2%   Low level output of end period: 0.1ms (nominally)

Formula to calculate the CO2 concentration in PWM:

$Cppm = 10000 \times (TH-0.1ms)/(TH+TL-0.2ms)$ where Cppm is the CO2 concentration, unit in ppm；

TH is the time of high level in one cycle.   TL is the time of low level in one cycle

This product manual only provides data reference, and we have been working hard to ensure the accuracy of the document.
For complete product specifications, please contact us.
If the customer's conditions for using the sensor are beyond our control, we cannot provide any warranty:
The conditions of using the sensor exceed the temperature, humidity and pressure range of the sensor in the document;
Tear off the sensor tag;
Cause mechanical damage to the sensor;
Excessive external mechanical pressure (such as extrusion);
The sensor warranty period is exceeded; the long-term overrange is used;

Webiste: www.semeatech.com
Address: 39,Valley View Irvine,CA 92612 Orange,USA
Tel: +1-949-683-2886 Email:info_us@semeatech.com   **Page2**   **REV.: 2017/05**