



# iS-BSM-D12 Battery Safety Sensor Module Datasheet

## Communication

### UART Series port

Item	Specification
Baud rate	9600 bits/s
Data bit	8
Parity bit	None
Stop bit	1
Protocol	1, Master send 0xFF 52 01 01 AC to reset baseline to current value. 2, Master send 0xFF 67 01 01 97 to automatic upload data packet once per Sec.. Send 0xFF 67 00 00 99 to restore to query mode. 3, Master send 0xFF 61 02 01 9C in query mode to acquire 13 bytes data packet.

### I<sup>2</sup>C bus

Item	Specification
Frequency	Standard Mode:100kbts/s
Slave Addr.	0xA2 (7 bit addr. mode, shift left by 0x51)
Do Read	Acquire 13 bytes data packet by do read operation
Do Write	Reset baseline to current value by do write 0xFF 52 01 01 AC operation

### Data Packet

Byte	Name	Description
0	Packet Head	0xFF
1-2	CO [ppm]	Data[1]*2 <sup>8</sup> +Data[2]
3	Status	0x00: OK 0x01: Heating 0x02: Error
4	Temp. return [°C]	(Data[4]*8-669)/10
5	Humi. Return [%RH]	(Data[5]*8-125)/10
6-7	H <sub>2</sub> [ppm]	Data[6]*2 <sup>8</sup> +Data[7]
8	Environ. Temp. [°C]	Data[8]-20
9-11	Sensor Res. [Ω]	Data[9]*2 <sup>16</sup> +Data[10]*2 <sup>8</sup> +Data[11]
12	Check Code	~(Sum(D[1]:D[11]))+1

Remarks: Data [4] and Data [5] are used for external humidity compensation

## Environmental Specifications

Item	Specification
Operating Temp.	-10 ~ +60 °C
Operating Humidity	5 ~95 % RH, non-condensing
Storage Temp.	-40 ~ 85 °C
Storage Humidity	5 ~95 % RH, non-condensing

## Attentions

Please read the following terms carefully to avoid product data errors and prevent product damage.

- 1, The gas sensor must be reflow soldering in neutral atmosphere. The welding furnace should have sufficient flow of clean air to maintain the air clean. The maximum temperature is 260 °C . Manual soldering conditions are recommended for a maximum temperature of 350 °C for 5 seconds. . It is recommended that it should be aged for more than 4 hours to eliminate the influence of welding process on the gas sensor.
- 2, The products should not be exposed to high concentrations of organic solvent vapor, silicone vapor, in order to prevent sensitive material poisoning. The products should be placed in the filter protected space to prevent water and dust. The installation direction can be used to prevent dust deposition.
- 3, The sensor resistance will experience a continuous increase after power on. The time span of this process depends on the sensor heat history and storage environment. The longer time is needed when off time is long. It is recommended to preheat at least 60 min. to get a reliable results.
- 4, It is recommended to use ESD protection equipment when handling the products.
- 5, When a specific kind of gas needs to be measured, the chip operating temperature can be set to achieve better selectivity. Please consult for more information.
- 6, Reflow soldering is prohibited for the filter cover. Design the PCB mounting hole for filter cover.

More information, Please contact:

[mnst@mnsenstech.com](mailto:mnst@mnsenstech.com)

Address: Room 401, Unit 1, South Xingye Building, Wuhan University Science & Technology Park, East Lake New Hi-Tech Development Zone, Wuhan City Hubei Province, PRC.

