MC101  Catalytic Gas Sensor

MC101 operate on the catalytic combustion principle, and its two arms of electric bridge consists of a test element and a compensate element. The resistance of the test element raised when meeting the combustible gas, in the same time, the output voltage of the bridge changed, the voltage variable is raised in direct proportion as the gas concentration, the compensate element as a reference, and compensate of temperaturer and humidity.

**Feature**
*The bridge output in liner
*Fast response
*Good reproducibility and selectivity
*Working stedibility
*Excellent resistance of H2S, silicon poisoning

**Application**
Application in gas concentration detection in industrial field such as natural gas, LPG, coal gas, alkane etc combustible gas, and gasoline, Alcohol, ketone, benzene etc organic solvent; Combustible gas leaking alarm or detectors; Gas concentration meter.

**Specification**

<table>
<thead>
<tr>
<th></th>
<th>MC101</th>
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</thead>
<tbody>
<tr>
<td>Type</td>
<td>Catalytic</td>
</tr>
<tr>
<td>Series</td>
<td>Plastic</td>
</tr>
<tr>
<td>Working voltage(V)</td>
<td>3.0±0.1</td>
</tr>
<tr>
<td>Working current(mA)</td>
<td>110±10</td>
</tr>
<tr>
<td>Sensitivity(mV)</td>
<td>1% Methane 25~50</td>
</tr>
<tr>
<td></td>
<td>1% Butane 30~50</td>
</tr>
<tr>
<td></td>
<td>1% Hydrogen 25~45</td>
</tr>
<tr>
<td>Liner (%)</td>
<td>≤5</td>
</tr>
<tr>
<td>Test range (%LEL)</td>
<td>0~100</td>
</tr>
<tr>
<td>Response time (90%)</td>
<td>Less than 10s</td>
</tr>
<tr>
<td>Recovery time (90%)</td>
<td>Less than 30s</td>
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<tr>
<td>Working environment</td>
<td>-40～+70℃ less than 95%RH</td>
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<tr>
<td>Storage</td>
<td>-20～+70℃ less than 95%RH</td>
</tr>
<tr>
<td>Size (mm)</td>
<td>Φ12mm×8mm</td>
</tr>
</tbody>
</table>

**Configuration**

**Basic testing circuit**
Sensitivity, response and recovery

Output signal changed by Tem.

Output signal changed by voltage
**Long time stability**

The drift in air per year is less than ±2mV, in 1%CH₄ is less than ±2mV. For a short period storage (in 2 weeks), the sensor need 30mins preheating to stabilize. For more than one year storage, it need more than 5 hours preheating.

![Graph showing Long time stability](image)

**Notice**

1. **Must be avoid**
   1.1 Under the organic silicon
      If the sensor face adsorb the organic silicon, its sensing elements will be wrapped and restrained its sensitivity, also can not recover. The sensor must be avoid in the silicon, fixture, rubber, oily or other plastic additive of silicon.
   1.2 Under the High causticity place
      The sensor is under the high concentration causticity such as H₂S, SOₓ, Cl₂, HCl ect, it not only result the heating material and the sensor lead causticity or broken, but also changed the performance of the sensing material.
   1.3 Pollution in alkali, alkali metal salt, halogen
      The sensor performance reduced by the pollution of the alkali metal especially brine spray, and under the halogen such as Fluorin.
   1.4 Meeting water
      If spatter water or dip in the water, it will result ot its sensitivity reduced.
   1.5 Icing
      If water icing on the sensor face, it will result that the sensing material smash and lose its sensitivity.
   1.6 High voltage
      If the voltage is higher than the value of the sensor or the heater, though the sensor is not broken, it will result that the lead or the heater broken, and make its sensitivity reduced.

2. **Avoid as possible**

   2.1 Water coagulation
      In the home, light coagulate water will impact the sensor performance not too much, but if the water coagulated on the face and for some time, the sensitivity will be reduced.

   2.2 In the high concentration gas
      Whether the sensor is electrify, the sensor storaged in the high concentration gas for a long Time, it will impact its sensitivity.

2.3 Long time storage
The sensor is stored for a long time without electrify, its resistance will be drift.
And this case is of the storage environment. The sensor must be stored in the seal bag without any silicon. The sensor is not electrified for storage, it must be electrified for a long time before using.

2.4 under the extremity place for a long time
Wether the sensor is electrify, under the extremity place for a long time such as high temperature, high humidity, or high pollution ext, it will impact the sensor performance heavily.

2.5 Vibration
Vibration frequently or excessively, it will impact the sensor lead broken. And the vibration also will be happened in the transportation or assembling or welding process.

2.6 Concussion
If the sensor is struck heavily, it will make the lead broken.

2.7 Using
It is better of welding by hand for a sensor.
If you used the wave welding, please satisfied the conditions as below:
2.7.1 Welding assist: Include the least rosin
2.7.2 Speed: 1-2m/min
2.7.3 Preheating temperature: 100±20°C
2.7.4 Welding temperature: 250±10°C
2.7.5 1time passed the machine
If you disobey the conditions, it will impact the sensor sensitivity.
MC105 Catalytic Gas Sensor

MC105 operate on the catalytic combustion principle, and its two arms of electric bridge consists of a test element and a compensate element. The resistance of the test element rises when meeting the combustible gas, in the same time, the output voltage of the bridge changed, the voltage variable is risen in direct proportion as the gas concentration, the compensate element as a reference, and compensate of tempaterature and humidity.

**Feature**
*The bridge output in liner
*Fast response
*Good reproducibility and selectivity
*Working steability
*Excellent resistance of H2S, silicon poisoning

**Application**
Application in gas concentration detection in industrial field such as
natural gas, LPG, coal gas, alkane ect combustible gas, and gasoline,
Alcohol, ketone, benzene ect organic solvent;
Combustible gas leaking alarm or detectors;
Gas concentration meter.

**Specification**

<table>
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<th>MC105</th>
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<tbody>
<tr>
<td>Type</td>
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<tr>
<td>Series</td>
<td>Plastic</td>
</tr>
<tr>
<td>Working voltage(V)</td>
<td>2.5±0.1</td>
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<tr>
<td>Working current(mA)</td>
<td>150±10</td>
</tr>
<tr>
<td>Sensitivity(mV)</td>
<td></td>
</tr>
<tr>
<td>1% Methane</td>
<td>20~45</td>
</tr>
<tr>
<td>1% Butane</td>
<td>25~45</td>
</tr>
<tr>
<td>1% Hydrogen</td>
<td>20~40</td>
</tr>
<tr>
<td>Liner (%)</td>
<td>≤5</td>
</tr>
<tr>
<td>Test range (%LEL)</td>
<td>0~100</td>
</tr>
<tr>
<td>Response time (90%)</td>
<td>Less than 10s</td>
</tr>
<tr>
<td>Recovery time (90%)</td>
<td>Less than 30s</td>
</tr>
<tr>
<td>Working environment</td>
<td>-40—+70℃ less than 95%RH</td>
</tr>
<tr>
<td>Storage</td>
<td>-20—+70℃ less than 95%RH</td>
</tr>
<tr>
<td>Size (mm)</td>
<td>Φ12mm×8mm</td>
</tr>
</tbody>
</table>
Sensitivity, response and recovery

Output signal changed by Tem.

Output signal changed by voltage

Output signal changed by voltage
**Long time stability**

The drift in air per year is less than ±2mV, in 1%CH₄ is less than ±2mV. For a short period storage (in 2 weeks), the sensor need 30mins * preheating to stabilize. For more than one year storage, it need more than 5 hours preheating.

![Long time stability graph]

**Notice**

1. **Must be avoid**
   1.1 Under the organic silicon
      
      If the sensor face adsorb the organic silicon, its sensing elements will be wrapped, and restrained its sensitivity, also can not recover. The sensor must be avoid in the silicon, fixture, rubber, oily or other plastic additive of silicon.
   1.2 Under the High causticity place
      
      The sensor is under the high concentration causticity such as H₂S, SO₃, Cl₂, HCl ect, it not only result the heating material and the sensor lead causticity or broken, but also changed the performance of the sensing material.
   1.3 Pollution in alkali, alkali metal salt, halogen
      
      The sensor performance reduced by the pollution of the alkali metal especially brine spray, and under the halogen such as Fluorin.
   1.4 Meeting water
      
      If spatter water or dip in the water, it will result ot its sensitivity reduced.
   1.5 Icing
      
      If water icing on the sensor face, it will result that the sensing material smash and lose its sensitivity.
   1.6 High voltage
      
      If the voltage is higher than the value of the sensor or the heater, though the sensor is not broken, it will result that the lead or the heater broken, and make its sensitivity reduced.

2. **Avoid as possible**

   2.1 Water coagulation
      
      In the home, light coagulate water will impact the sensor performance not too much, but if the water coagulated on the face and for some time, the sensitivity will be reduced.
   2.2 In the high concentration gas
      
      Whether the sensor is electrify, the sensor storaged in the high concentration gas for a long Time, it will impact its sensitivity.
   2.3 Long time storage
      
      The sensor is storaged for a long time without electrify, its resistance will be drift.
And this case is of the storage environment. The sensor must be storage in the seal bag without any silicon. The sensor is not electrified for storage, it must be electrify for a long time before using.

2.4 under the extremity place for a long time

Wether the sensor is electrify, under the extremity place for a long time such as high temperature, high humidity, or high pollution ext, it will impact the sensor performance heavily.

2.5 Vibration

Vibration frequently or excessively, it will impact the sensor lead broken. And the vibration also will be happened in the transportation or assembling or welding process.

2.6 Concussion

If the sensor is striked heavily, it will make the lead broken.

2.7 Using

It is better of welding by hand for a sensor.

If you used the wave welding, please satisfied the conditions as below:

2.7.1 Welding assist: Include the least rosin
2.7.2 Speed: 1-2m/munite
2.7.3 Preheating temperature: 100±20°C
2.7.4 Welding temperature: 250±10°C
2.7.5 1time passed the machine

If you disobey the conditions, it will impact the sensor sensitivity.
MC112  Catalytic Gas Sensor

MC112 operate on the catalytic combustion principle, and its two arms of electric bridge consists of a test element and a compensate element. The resistance of the test element rised when meeting the combustible gas, in the same time, the output voltage of the bridge changed, the voltage variable is rised in direct proportion as the gas concentration, the compensate element as a reference, and compensate of temperaturer and humidity.

**Feature**

* The bridge output in liner
* Fast response
* Good reproducibility and selectivity
* Working steability
* Excellent resistance of H2S, silicon poisoning

**Application**

Application in gas concentration detection in industrial field such as natural gas, LPG, coal gas, alkane ect combustible gas, and gasoline, Alcohol, ketone, benzene ect organic solvent;
Combustible gas leaking alarm or detectors;
Gas concentration meter.

**Specification**

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</thead>
<tbody>
<tr>
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</tr>
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<td>Standard cover</td>
<td>Metal, Metallurgy powder mesh</td>
<td></td>
</tr>
<tr>
<td>Working voltage(V)</td>
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<td></td>
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<tr>
<td>Working current(mA)</td>
<td>110±10</td>
<td></td>
</tr>
<tr>
<td>Sensitivity(mV)</td>
<td>1% CH4 20~40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1% C4H10 30~50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1% H2 25~45</td>
<td></td>
</tr>
<tr>
<td>Liner (%)</td>
<td>≤5</td>
<td></td>
</tr>
<tr>
<td>Test range (%LEL)</td>
<td>0~100</td>
<td></td>
</tr>
<tr>
<td>Response time (90%)</td>
<td>Less than 10s</td>
<td></td>
</tr>
<tr>
<td>Recovery time (90%)</td>
<td>Less than 30s</td>
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</tr>
<tr>
<td>Working environment</td>
<td>-40~+70°C less than 95%RH</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>-20~+70°C less than 95%RH</td>
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<tr>
<td>Size (mm)</td>
<td>MC112: 9.5×14×19</td>
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<tr>
<td>Anti-explosion</td>
<td>Exdib I</td>
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</tbody>
</table>
Sensitivity, response and recovery

Output signal changed by Tem.

Output signal changed by voltage
**Long time stability**

The drift in air per year is less than ±2mV, in 1% CH₄ is less than ±2mV. For a short period storage (in 2 weeks), the sensor need 30mins’ preheating to stabilize. for more than one year storage, it need more than 5 hours peheating.

![Graph showing long term stability](image)

**Notice**

1 **Must be avoid**

1.1 Under the organic silicon

   If the sensor face adsorb the organic silicon, its sensing elements will be wraped, and restrained its sensitivity, also can not recover. The sensor must be avoid in the silicon, fixture, rubber, oily or other plastic additive of silicon.

1.2 Under the High causticity place

   The sensor is under the high concentration causticity such as H₂S, SOₓ, Cl₂, HCl ect, it not only result the heating material and the sensor lead causticity or broken, but also changed the performance of the sensing material.

1.3 Pollution in alkali, alkali metal salt, halogen

   The sensor performance reduced by the pollution of the alkali metal especially brine spray, and under the halogen such as Fluorin.

1.4 Meeting water

   If spatter water or dip in the water, it will result ot its sensitivity reduced.

1.5 Icing

   If water icing on the sensor face, it will result that the sensing material smash and lose its sensitivity.

1.6 High voltage

   If the voltage is higher than the value of the sensor or the heater, though the sensor is not broken, it will result that the lead or the heater broken, and make its sensitivity reduced.

2 **Avoid as possible**

2.1 Water coagulation

   In the home, light coagulate water will impact the sensor performance not too much, but if the water coagulated on the face and for some time, the sensitivity will be reduced.

2.2 In the high concentration gas

   Whether the sensor is electrify, the sensor storaged in the high concentration gas for a long Time, it will impact its sensitivity.

2.3 Long time storage
The sensor is stored for a long time without electrify, its resistance will be drift.
And this case is of the storage environment. The sensor must be stored in the seal bag without
any silicon. The sensor is not electrified for storage, it must be electrified for a long time before using.

2.4 Under the extremity place for a long time
Wether the sensor is electrified, under the extremity place for a long time such as high temperature, high
humidity, or high pollution ext, it will impact the sensor performance heavily.

2.5 Vibration
Vibration frequently or excessively, it will impact the sensor lead broken. And the vibration also will be
happened in the transportation or assembling or welding process.

2.6 Concussion
If the sensor is struck heavily, it will make the lead broken.

2.7 Using
It is better of welding by hand for a sensor.
If you used the wave welding, please satisfied the conditions as below:
2.7.1 Welding assist: Include the least rosin
2.7.2 Speed: 1-2 m/min
2.7.3 Preheating temperature: 100±20°C
2.7.4 Welding temperature: 250±10°C
2.7.5 1 time passed the machine
If you disobey the conditions, it will impact the sensor sensitivity.
MC115  Catalytic Gas Sensor

MC115 operate on the catalytic combustion principle, and its two arms of electric bridge consists of a test element and a compensate element. The resistance of the test element rised when meeting the combustible gas, in the same time, the output voltage of the bridge changed, the voltage variable is rised in direct proportion as the gas concentration, the compensate element as a reference, and compensate of temperaturer and humidity.

**Feature**

*The bridge output in liner
*Fast response
*Good reproducibility and selectivity
*Working steability
*Excellent resistance of H2S、silicon poisoning

**Application**

Application in gas concentration detection in industrial field such as natural gas, LPG, coal gas, alkane ect combustible gas, and gasoline, Alcohol, ketone, benzene ect organic solvent; Combustible gas leaking alarm or detectors; Gas concentration meter.

**Specification**

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<tr>
<td><strong>Standard cover</strong></td>
<td>Metal, Metallurgy powder mesh</td>
</tr>
<tr>
<td><strong>Working voltage(V)</strong></td>
<td>3.0V±0.1</td>
</tr>
<tr>
<td><strong>Working current(mA)</strong></td>
<td>110±10</td>
</tr>
<tr>
<td><strong>Sensitivity(mV)</strong></td>
<td></td>
</tr>
<tr>
<td>1% CH4</td>
<td>20~45</td>
</tr>
<tr>
<td>1% C4H10</td>
<td>30~50</td>
</tr>
<tr>
<td>1% H2</td>
<td>25~45</td>
</tr>
<tr>
<td><strong>Liner (%)</strong></td>
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<tr>
<td><strong>Test range (％LEL)</strong></td>
<td>0~100</td>
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<tr>
<td><strong>Response time (90%)</strong></td>
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</tr>
<tr>
<td><strong>Recovery time (90%)</strong></td>
<td>Less than 30s</td>
</tr>
<tr>
<td><strong>Working envirenment</strong></td>
<td>-40~+70℃ less than 95%RH</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
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<tr>
<td><strong>Size (mm)</strong></td>
<td>Φ4mm×6mm</td>
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</tbody>
</table>

**Configuration**

**Basic testing circuit**
Sensitivity response and recovery

**Output signal changed by Tem.**

**Output signal changed by Tem.**

**Output signal changed by voltage**

**Response and Resume Time**
**Long time stability**

The drift in air per year is less than ±2mV, in 1%CH₄ is less than ±2mV. For a short period storage (in 2 weeks), the sensor need 30mins’ preheating to stabilize. for more than one year storage, it need more than 5 hours peheating.

![Long term stability graph](image)

**Notice**

1 **Must be avoid**

1.1 Under the organic silicon

   If the sensor face adsorb the organic silicon, its sensing elements will be wrapped, and restrained its sensitivity, also can not recover. The sensor must be avoid in the silicon, fixature, rubber, oily or other plastic additive of silicon.

1.2 Under the High causticity place

   The sensor is under the high concentration causticity such as H₂S, SOₓ, Cl₂, HCl ect, it not only result the heating material and the sensor lead causticity or broken, but also changed the performance of the sensing material.

1.3 Pollution in alkali, alkali metal salt, halogen

   The sensor performance reduced by the pollution of the alkali metal especially brine spray, and under the halogen such as Fluorin.

1.4 Meeting water

   If spatter water or dip in the water, it will result ot its sensitivity reduced.

1.5 Icing

   If water icing on the sensor face, it will result that the sensing material smash and lose its sensitivity.

1.6 High voltage

   If the voltage is higher than the value of the sensor or the heater, though the sensor is not broken, it will result that the lead or the heater broken, and make its sensitivity reduced.

2 **Avoid as possible**

2.1 Water coagulation

   In the home, light coagulate water will impact the sensor performance not too much, but if the water coagulated on the face and for some time, the sensitivity will be reduced.

2.2 In the high concentration gas

   Whether the sensor is electrify, the sensor storaged in the high concentration gas for a long Time, it will impact its sensitivity.

2.3 Long time storage
The sensor is storaged for a long time without electrify, its resistance will be drift, And this case is of the storage environment. The sensor must be storage in the seal bag without Any silicon. The sensor is not electrified for storage, it must be electrify for a long time before using.

2.4 under the extremity place for a long time
Wether the sensor is electrify, under the extremity place for a long time such as high temperature, high humidity, or high pollution ext, it will impact the sensor performance heavily.

2.5 Vibration
Vibration frequently or excessively, it will impact the sensor lead broken. And the vibration also will be happened in the transportation or assembling or welding process.

2.6 Concussion
If the sensor is struck heavily, it will make the lead broken.

2.7 Using
It is better of welding by hand for a sensor.
If you used the wave welding, please satisfied the conditions as below:
2.7.1 Welding assist: Include the least rosin
2.7.2 Speed: 1-2m/munite
2.7.3 Preheating temperature: 100±20°C
2.7.4 Welding temperature: 250±10°C
2.7.5 1time passed the machine
If you disobey the conditions, it will impact the sensor sensitivity.
MC203  Catalytic Gas Sensor

MC203 operate on the catalytic combustion principle, and its two arms of electric bridge consists of a test element and a compensate element. The resistance of the test element rised when meeting the combustible gas, in the same time, the output voltage of the bridge changed, the voltage variable is rised in direct proportion as the gas concentration, the compensate element as a reference, and compensate of temperaturer and humidity.

**Feature**

**Configuration**
- The bridge output in liner
- Fast response
- Good reproducibility and selectivity
- Working steability
- Excellent resistance of H2S, silicon poisoning

**Application**
Application in gas concentration detection in industrial field such as combustible gas, and gasoline, Alcohol, ketone, benzene etc organic solvent; Combustible gas leaking alarm or detectors; Gas concentration meter.

**Specification**

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<thead>
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<tr>
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<tr>
<td>1% Methane</td>
<td>25~50</td>
</tr>
<tr>
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<td>30~50</td>
</tr>
<tr>
<td>1% Hydrogen</td>
<td>25~45</td>
</tr>
<tr>
<td>Liner (%)</td>
<td>≤5</td>
</tr>
<tr>
<td>Test range (%LEL)</td>
<td>0~100</td>
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<tr>
<td>Response time (90%)</td>
<td>Less than 10s</td>
</tr>
<tr>
<td>Recovery time (90%)</td>
<td>Less than 30s</td>
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<tr>
<td>Working environment</td>
<td>-40~+70℃ less than 95%RH</td>
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<tr>
<td>Storage</td>
<td>-20~+70℃ less than 95%RH</td>
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<tr>
<td>Size (mm)</td>
<td>Φ20mm×21mm</td>
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</tbody>
</table>

Basic testing circuit
Sensitivity, response and recovery

Output signal changed by Tem.

Output signal changed by voltage
**Long time stability**

The drift in air per year is less than ±2mV, in 1%CH₄ is less than ±2mV. For a short period storage (in 2 weeks), the sensor need 30mins preheating to stabilize. For more than one year storage, it need more than 5 hours preheating.

![Graph showing long time stability](image)

**Notice**

1 **Must be avoid**

1.1 Under the organic silicon

   If the sensor face adsorb the organic silicon, its sensing elements will be wrapped and restrained its sensitivity, also can not recover. The sensor must be avoid in the silicon, fixture, rubber, oily or other plastic additive of silicon.

1.2 Under the High causticity place

   The sensor is under the high concentration causticity such as H₂S, SOₓ, Cl₂, HCl ect, it not only result the heating material and the sensor lead causticity or broken, but also changed the performance of the sensing material.

1.3 Pollution in alkali, alkali metal salt, halogen

   The sensor performance reduced by the pollution of the alkali metal especially brine spray, and under the halogen such as Fluorin.

1.4 Meeting water

   If spatter water or dip in the water, it will result ot its sensitivity reduced.

1.5 Icing

   If water icing on the sensor face, it will result that the sensing material smash and lose its sensitivity.

1.6 High voltage

   If the voltage is higher than the value of the sensor or the heater, though the sensor is not broken, it will result that the lead or the heater broken, and make its sensitivity reduced.

2 **Avoid as possible**

2.1 Water coagulation

   In the home, light coagulate water will impact the sensor performance not too much, but if the water coagulated on the face and for some time, the sensitivity will be reduced.

2.2 In the high concentration gas

   Whether the sensor is electrify, the sensor stored in the high concentration gas for a long time, it will impact its sensitivity.

2.3 Long time storage
The sensor is stored for a long time without electrify, its resistance will be drift.
And this case is of the storage environment. The sensor must be stored in the seal bag without
any silicon. The sensor is not electrified for storage, it must be electrified for a long time before using.

2.4 Under the extremity place for a long time
Wether the sensor is electrify, under the extremity place for a long time such as high temperature, high
humidity, or high pollution ext, it will impact the sensor performance heavily.

2.5 Vibration
Vibration frequently or excessively, it will impact the sensor lead broken. And the vibration also will be
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2.6 Concussion
If the sensor is struck heavily, it will make the lead broken.

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It is better of welding by hand for a sensor.
If you used the wave welding, please satisfied the conditions as below:
2.7.1 Welding assist: Include the least rosin
2.7.2 Speed: 1-2m/minute
2.7.3 Preheating temperature: 100±20℃
2.7.4 Welding temperature: 250±10℃
2.7.5 1time passed the machine
If you disobey the conditions, it will impact the sensor sensitivity.