

Fixed Gas Detector

YT-95H-XX

Instruction Manual



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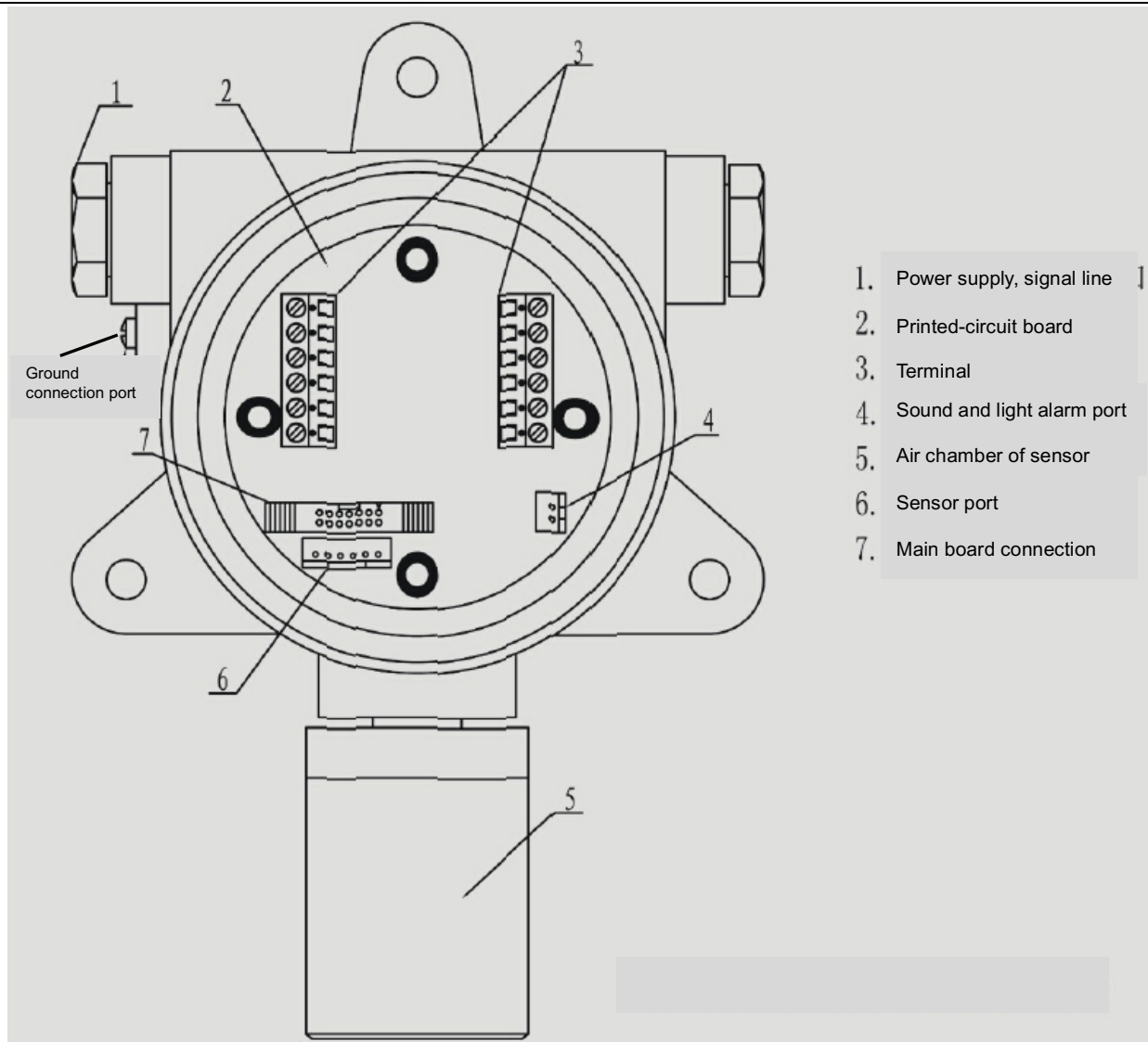
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Notice to Reader

Please read this instruction manual before using the detector

Matters need attention

- A. Please read this instruction manual before using the detector.
- B. The detector must be used in compliance with the designated procedures of our company.
- C. The warranty period of this transmitter is 12months (starts from the date user get the detector).Users should comply with the instructions in the use of this detector. Any damages or malfunctions caused by improper operation of users are not within the scope of warranty.
- D. Repair and replacement of any parts must be operated by trained staff under authorization of our company, using original spare part. The operator is responsible for the liability if users operate the repair of replacement by themselves.
- E. There is acid solution inside the transmitter, please do not disassemble it. And pay attention not to damage the frontal membrane of the transmitter. If the skin is stained with the acid solution, the right remedy is to flushing the stained skin continuously with clean water for 10minutes.
- F. The detector must be calibrated for once each year. The explosion proof sheet parts of the transmitter need to be cleaned regularly (blow with low pressure compressed air), otherwise the detection sensitivity will be affected by the dust and impurities clogging protection hole.



Technical performance and parameters

1. Key Technical Indicator

| Target gas | Range | Accuracy | least count | response time |
|---------------------------------|------------|-----------|-------------|---------------|
| O ₂ | 0-30%Vol | <±2%(F.S) | 0.01%Vol | ≤15 |
| H ₂ S | 0-1000ppm | <±2%(F.S) | 1ppm | ≤15 |
| CO | 0-1000ppm | <±2%(F.S) | 1ppm | ≤25 |
| H ₂ | 0-20000ppm | <±2%(F.S) | 1ppm | ≤15 |
| CO ₂ | 0-10000ppm | <±2%(F.S) | 1ppm | ≤40 |
| C ₂ H ₄ | 0-100ppm | <±2%(F.S) | 0.01ppm | ≤60 |
| NO ₂ | 0-20.0ppm | <±2%(F.S) | 0.1ppm | ≤25 |
| N ₂ | 0-100%VOL | <±2%(F.S) | 0.01%VOL | ≤40 |
| TVOC | 0-6000ppm | <±2%(F.S) | 1ppm | ≤60 |
| NH ₃ | 0-100ppm | <±2%(F.S) | 0.01ppm | ≤40 |
| AsH ₃ | 0-10.00ppm | <±2%(F.S) | 0.01ppm | ≤30 |
| C ₃ H ₃ N | 0-200.0ppm | <±2%(F.S) | 0.1ppm | ≤40 |

| | | | | |
|-----------------|------------|-----------|---------|-----|
| F2 | 0-10 ppm | <±2%(F.S) | 0.01ppm | ≤25 |
| O ₃ | 0-5.00ppm | <±2%(F.S) | 0.01ppm | ≤50 |
| CL ₂ | 0-10.00ppm | <±2%(F.S) | 0.01ppm | ≤60 |
| BF ₃ | 0-10.00ppm | <±2%(F.S) | 0.01ppm | ≤60 |

Repeatability: <2%

Zero drift: < ± 2% (F•S) /6M

Operating temperature: -20~+50 °C

Environment temperature: <90%RH

Working principle of the transmitter: electrochemical for oxygen and hazardous gases, catalytic combustion for combustible gases

Lifespan of transmitter: 3years for combustible gas transmitter; 2years for hazardous gas transmitter

2. Other Technical Parameters

Inspection mode: diffusion

Working mode: fixed long-term continuous work

Working voltage: 12~30VDC

Working current: oxygen and hazardous gas <50mA (Max)

combustible gas <150mA (Max)

Output signal: three-wire 4~20 mA standard signal output or 485 signal output

Exterior structure: die-casting aluminum housing

Dimensions: 135 x 125 x 116mm (without mounting bracket)

167 x 145 x 126mm (with bracket)

Weight: 2KG

Connection cable (6 core cable) is defined as follows:

4~20mA with RS485:

Red: positive-input of power (12 to 24V)

Black: ground wire of power

Yellow: 4~20mA output.

Orange: RS485A

Blue: RS485B

Brown: Free

Connection distance: <1000m

Protection grade: IP65

Installation type: on wall

Type of explosion-proof: flame proof

Explosion-proof grade: Ex dII CT6

Inlet port: hexagonal locknut

Settings of Remote Control

The remote control applied to all product type produced by Yuante.

1. Press "MENU" once to enter F01, address code setting menu. Press "OK" to modify, press "+" "-"to modify address code of the detector. Press "OK" to save settings and "BACK" to cancel.

2. Press "MENU", then press "+"to enter F02, minimum value setting menu of gas alarm., Press "OK" to modify, press "+" "-"to modify the value. Press "OK" to save settings and "BACK" to cancel.

3. Continue to press "+"to enter F03, maximum value setting menu of gas alarm., Press "OK" to modify, press "+" "-"to modify the value. Press "OK" to save settings and "BACK" to cancel. Same operation with F04 (zero point calibration), F05 (range calibration), F06 (AD value).

4. Press "MENU" four times to enter a shift status, under this status:

Press "RESET" once, the data would be 255, one more it would be 0. Just press "RESET" to shift. When the data is 0, press "+"or "-"to modify alarm point, the data difference would be only 1. When the data is 255, press "+"or "-"to modify alarm point, the data difference would be 1000. "RESET" can also be used as mute button when it is alarming.

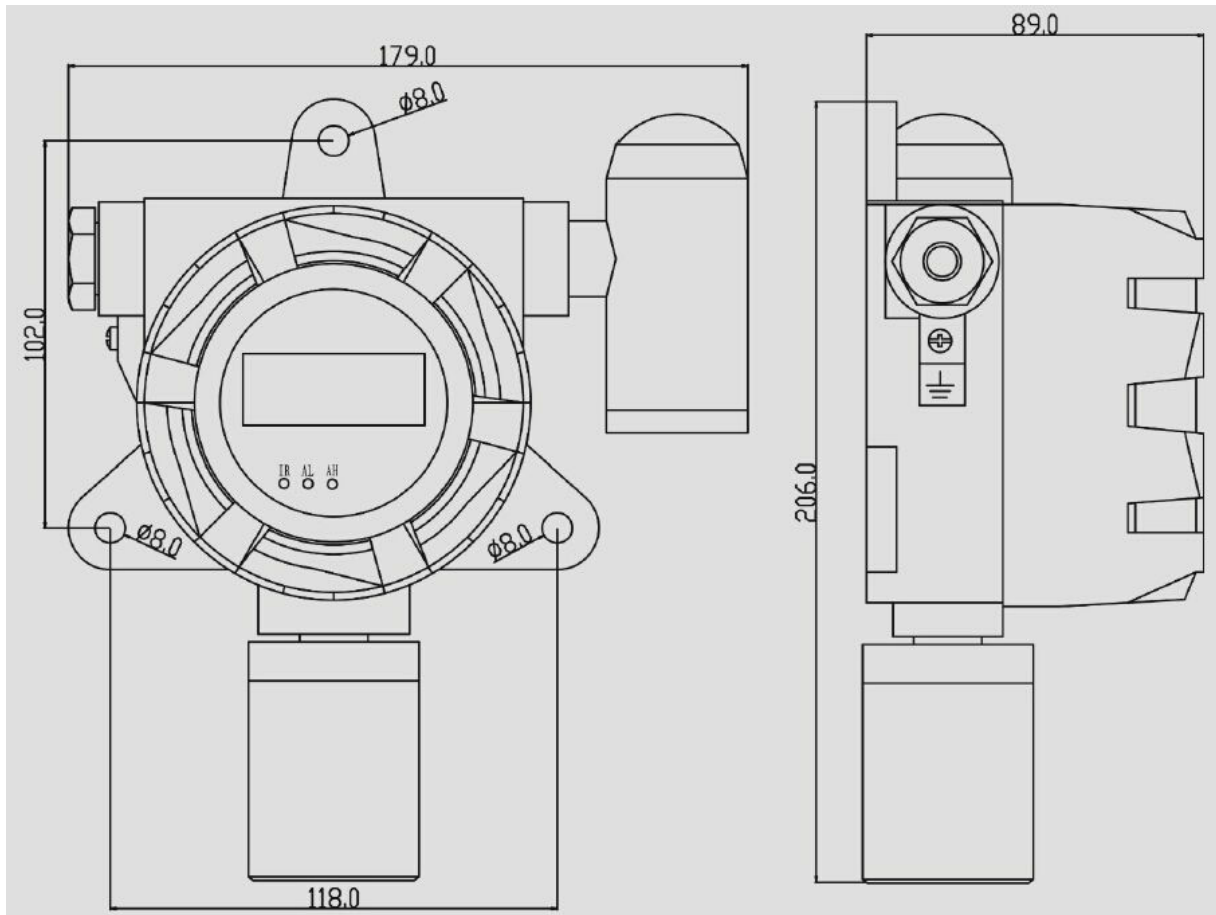
Installation Instruction

1. Location Selection

The location selection of the gas detection transmitter is essential to achieve the best detection results. In the selection of location, we need to consider the following factors: the density of gas in a leaking point, proportion of target gas, the impact of surrounding buildings, condition of production equipment, wind direction and annual meteorological conditions and even the location of windows and doors in an indoor environment.

We provide the following suggestions for your reference:

- A. Maintain a proper distance between the detector and the possible gas leaking point. It would react too fast or too frequent if the distance is not enough, which may paralyze people's mind.
- B. The detector must be located in the downwind of the possible leaking point.
- C. If installed indoor, but the source of the leak is outdoor, the detector must be installed at the air inlet.
- D. Determine the height according to proportion of target gas in air.
- E. Determine the quantity of detectors according to the condition of possible leaking point, frequency of staff attendance and time of stay as well as the economic effect.
- F. Consider to increase quantity of inspection point if the equipment is old.
- G. Protect the detector from radiation of high temperature heart source. Environments of both very high temperature and very low temperature will affect the result and lifespan of the detector.



2. Steps of Installation

Connect wire to correspondent terminals. Don't do hot-line work. The arrangement of terminals differs according to the type of transmitter. The definition of different wires:

Red: positive-input of power (12 to 24V)

Black: ground wire of power

Yellow: 4~20mA output.

Orange: RS485A

Blue: RS485B

Brown: spare

Connect wire to correspondent terminal. Don't do hot-line work. The connection modes differ according to the type of transmitters.

Fix the detector on the wall with expansion bolt, make sure the transmitter is downward, or the detector cannot work properly. Users can also separate the bracket and transmitter according to the condition on spot, fix the bracket before connection.

For the sake of safety and interference reduction, please connect the housing with reliable ground wire. For the wire between the transmitter and the main engine, the shorter, the better. And protect the wire with iron pipe as far as possible.

Method of Calibration

To guarantee the measurement accuracy of the transmitter, regular calibration and maintaining rigorous record is necessary.

Devices needed for calibration: a bottle of sample gas used for range calibration (60%F.S standard gas in normal site),relief valve, flow meter of 0~1000ml/min, transparent and smooth conduit for gas, standard gas housing, digital multimeter, stopwatch and etc.

Note: The value of transmitter WB (4mA) ,WC (20mA) ,Wz (zero potentiometer) , WA (range potentiometer, also known as calibration potentiometer) and host alarm has been set right before it leaves the factory. User should not adjust casually. It is the value of zero potentiometer (Z) and calibration potentiometer (S) needed to be set on spot.

1. Zero Point Calibration

We can power on to check the host and the transmitter after the connection. There should be current output (4mA when there is no target gas). When the output is stable after a period of time, adjust the zero potentiometer to set the value of transmitter at 4mA (it is better to take the condition of the spot into consideration, calibrate with portable gas detection alarm in clean air and safe place at the same time of zero calibration of transmitter). When the host show "0000", the calibration finished.

In the zero calibration of oxygen detection transmitter, we must use nitrogen of purity over 99.99%.

2. Range Calibration

Connect known standard gas with the standard gas housing using gas conduit, control the flow at 100—200ml/min with flowmeter. Blow the gas to the probe of the transmitter; when the output is stable, adjust the calibration potentiometer to make the value on the host equivalent to the nominal value of standard gas. Cut the gas supply and observe whether it can return to zero or starting point (in clean air), and repeat the operation, if the value difference of two times is in the range of basic deviation, the calibration is finished. Or we should repeat the above method until the value is acceptable (the value of oxygen detection transmitter often set at "20.9" in normal air). Please refer to picture 3.

Common Malfunction、 Repair and Maintenance

| Symptom | Reason | Method to process |
|---------------------------|---|---|
| No output for transmitter | wrong connection | connect again |
| | potential in reference point is not correct | Adjust zero point gradually and then adjust potentiometer (4mA) |
| | Circuit fault | Return to Yuante for repair |
| Too low host reading | Value of S potentiometer setting is too small | Calibrate again |
| | Transmitter failure | Get a new transmitter |
| Too high host reading | Value of S potentiometer setting is too large | Calibrate again |
| | Transmitter failure | Get a new transmitter2 |
| Instable host reading | Heat settling time is not enough | Wait for starting up |
| | Transmitter failure | Get a new transmitter |
| | Circuit fault | Return to Yuante for repair |

Product component

| | |
|---------------------------|-----|
| Fixed Gas Detector | one |
| Instruction Manual | one |
| Qualification Certificate | one |
| Remote Control | one |

