

Solidat Applied Technologies Ltd



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1. Precautions

This operation manual contains product installation and operation information. To prevent product damage and improper use, please read this manual carefully and operate the installation in a standardized manner to ensure the best performance of your instrument.

This operation manual will introduce how to use the product in a step-by-step manner, starting from the installation requirements of the product, to wiring, debugging, and other content, making it easier for you to use the product.

This operation manual is for simple instrument installation and wiring. If you want to learn more about instrument information, you can scan the QR code to learn more about instrument operation information, which can help you have a clearer understanding of more functions and selection.

Attention:



Please comply with local electrical installation regulations!

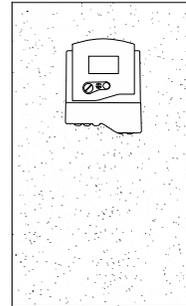
Please comply with local regulations and requirements for personnel health and safety. All operations on instrument electrical components must be completed by professionals who have received formal training.

Please check the nameplate of the instrument to ensure that the product specifications meet your requirements. Please ensure that the power supply voltage is consistent with the requirements on the instrument nameplate.

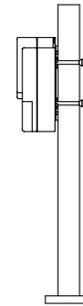
2. Installation instructions

Installation of control unit for zirconia analyzer

The shell of the zirconia analyzer (transmitter) is made of cast aluminum, and there is a control circuit inside the shell. The installation method is wall mounted or clamp mounted.



Wall mounted installation



Clamp type installation

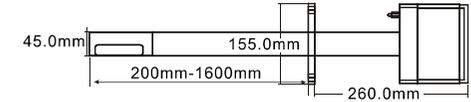
When installing the transmitter, the following issues should be considered:



- (1) The oxygen concentration value or information displayed on the transmitter should be clear. The button operation on the transmission panel should be easy and safe.
- (2) The inspection and maintenance of the transmitter should be easy and safe.
- (3) The ambient temperature does not exceed 55 °C and there is almost no temperature change (recommended to be within 15 °C within a day)
- (4) Normal ambient humidity (recommended between 40 and 75% RH) and no corrosive gases.
- (5) No vibration.
- (6) Approach the probe.
- (7) There is no direct sunlight. If the sun directly illuminates the transmitter, prepare a protective cover or other suitable sunshade.

Installation of zirconia analyzer detection unit

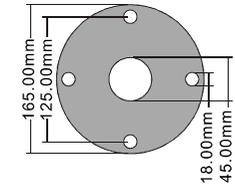
The probe part of the zirconia analyzer detection unit is made of stainless steel, with a cast aluminum head shell and electrical connection terminals inside the shell. In addition, the external reference air and calibration gas inlet and exhaust ports are also located on the cast aluminum casing.



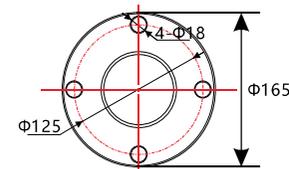
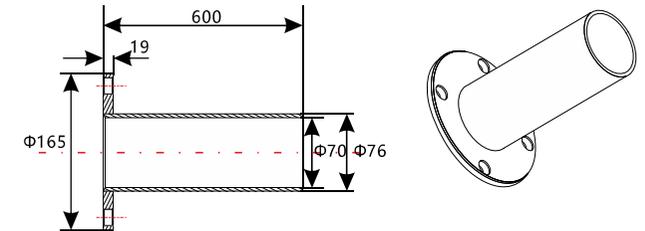
1. When building a new furnace or flue, it is necessary to wait several times for the oven to dry before installing the oxygen probe. Otherwise, excessively humid flue gas may reduce the service life of the new probe.
2. The flue gas temperature at the installation point of the detection unit should meet relevant requirements. Generally speaking, low flue gas temperature leads to long detector service life, high flue gas temperature, and short service life. The optimal flue gas temperature is between 300-600 °C.
3. The detection unit cannot be installed in dead corners where the flue gas does not flow, nor can it be installed in places where the flue gas flows quickly (such as the expansion chamber of some bypass air ducts).
4. The flue gas leakage is required to be small, and the detector installation and maintenance are convenient. For small and medium-sized boilers, it is recommended to install it in front of the economizer and behind the superheater, because the flow of flue gas in the boiler system flows from the furnace to the steam drum, passes through the superheater, economizer, and air preheater, and is discharged from the chimney after being recycled and treated by the induced draft fan. If the measuring point is too close to the outlet of the flue gas furnace, due to high temperature and fast flow rate, it will form erosion corrosion on the stainless steel shell of the detector, reducing its service life; If the measuring point is too far away, due to air leakage in the flue system, the oxygen content at the measuring point will be too high to accurately reflect the oxygen content in the flue gas in the furnace.

(a) Flange size:

Standard flange standard: flange outer diameter 165, screw hole spacing 125, screw hole diameter 18.

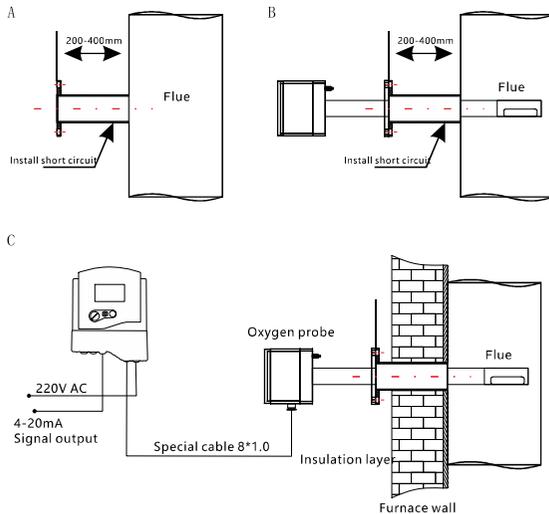


(b) Installation flange short connection size:



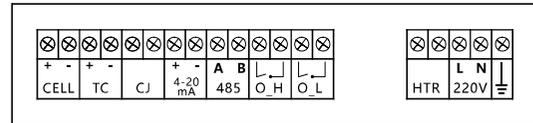
- [1] Open a hole on the flue with a diameter equivalent to the outer diameter of the casing.
- [2] Weld the sleeve onto the flue and leave enough space for inserting and tightening the safety bolts.
- [3] Install the flange gasket and insert the oxygen analyzer.
- [4] Insert the safety bolts from the rear end of the casing flange into the casing flange, flange gasket, and equipment installation flange, install the screw gasket and nut, and tighten them.

Installation diagram:

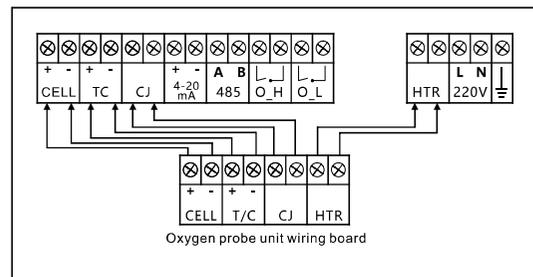
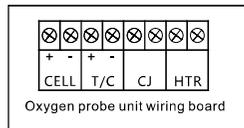


3. Wiring instructions

Explanation of analyzer instrument wiring terminals:



Description of wiring terminals for zirconia detector (probe):



4. Instrument operation instructions

After the correct installation is completed, turn on the power and let it warm up normally. After about 20 minutes, the temperature remains constant at 700 °C. The oxygen content can be analyzed normally, and the displayed oxygen content is the flue gas oxygen content.

Main page

| | |
|------------------------|------------------|
| SLD Oxygen Transmitter | |
| 20.6 | O ₂ % |
| TMP: 700 | °C |
| Output: 20 | mA |
| T/C open circuit | |

Secondary page

| | |
|----------------------------|-----------|
| SLD Oxygen Transmitter | |
| Oxygen content | 20.60 % |
| Temperature | 700.0 °C |
| Current | 20.000 mA |
| Sensor potential | 0.01 mv |
| Sensor background | 0.01 mv |
| Sensor internal resistance | 0 Ω |

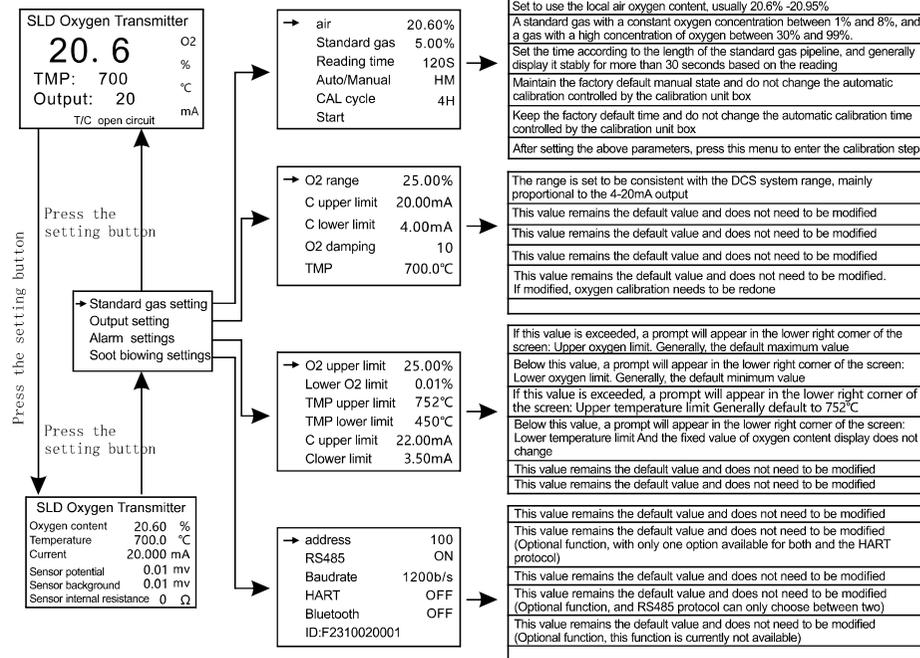


When the new equipment leaves the factory, it has been debugged and calibrated, and there is no need to perform any calibration and debugging after installation.

Press the "SET" button once to enter the display sub page, then press the "SET" button again to enter the settings menu. Press the "MENU" button to move the cursor to the relevant settings menu, press the OK button to enter the relevant settings submenu, press the "MENU" button to move the cursor to the desired item, press the OK button again, the cursor will become an asterisk, and then press the up or down button to change the relevant values.

Operation and setup flowchart

The content to be set under the oxygen calibration setting menu:



The SET key is used to enter the sub page and also as the return key. The MENU key is used to select menu keys for up and down selection, modify data by pressing the up/down keys, and the ENTER key is used to confirm.

6. Manual calibration flowchart

Manual calibration requires a standard gas cylinder, and the concentration of the standard gas is generally between 1% - 10%. Any standard value can be selected, and it is recommended to choose a concentration that is close to the actual working condition.

