



ECD Controller User Manual

» 1. Product Use

It is mainly used to access a variety of instruments for real-time display of gas concentration, Wi-Fi mode and cloud platform for data transmission.

» 2. Adopted Products

- Stox, StoxPro and FDM Smart Gas Sensor Devices adopt RS485 Modbus-RTU output mode.
- The RS485 Modbus-RTU output mode is used for CDS10 adjustments.
- Suitable for ECTox Smart Gas Sensor Device.
- Suitable for TB200B Gas Sensor Module.

» 3. Main Functions of the Product

- Display of the data.
- Calibration of the access equipment.
- Setting the alarm monitoring value.
- Wi-Fi signal transmission.

» 4. Application Environment

- The ECD Controller can be installed in indoor environments or in non-explosion-proof areas.
- Commercial and industrial applications.

» 5. Equipment Management

The ECD Controller has three types of slave equipment:

- ① Sensor device, address allocation: 1~8, divided into two communication modes:
 - RS485 for access
 - LORA insert
- ② Hold the relay, according to the function:
 - Single-circuit relay (address: 0 x EE)
 - 8-way relay (address: 0 x EF)
- ③ The LORA-4G gateway (address: 0 x ED) is mainly used to connect the cloud platform through 4G and query the transmission of LORA type sensor data.

Requirements for cloud device creation: TOKN must be EC + MAC. Device name must begin with an ECD.

For the TB200B Sensor Module, please use a special version of the software.

» 6. Introduction of the Device Page

1 IDLE Interface:

The IDLE interface is divided into 1 sensor data interface, 2 sensor data interfaces, 4 sensor data interfaces and 8 sensor data interfaces. At startup, the ECD Controller queries the slave via RS485 and displays different pages according to the number of sensors searched. For example, if searching for two sensors, two sensor data interfaces will be displayed. If 5 sensors are searched, 8 sensor data interfaces are displayed.

The specific interface is as follows:



Interface display instructions:



- 1: Sensor address: Is the unique identification of each sensor device relative to the ECD Controller.
- 2: Sensor module type.
- 3: Concentration value.
- 4: Concentration unit.
- 5: First and second level alarm setting and status: The first level alarm corresponds to the first dot. The second level alarm corresponds to the second dot. The dots are gray when no alarm is set and turn green when the alarm is set.

- 6: Wi-Fi status: Gray represents the absence of a Wi-Fi connection. Blue indicates the presence of a Wi-Fi connection.
- 7: Cloud connection status: Gray represents the absence of a connection to the cloud platform. Blue indicates a connection to the cloud platform.
- 8: 4G connection status: Gray represents no connection to a 4G channel. Blue indicates a connection to a 4G channel.
- 9: Menu button: Press <11> to unlock the menu.
- 10: Open SD card insertion status: Gray represents SD card is not inserted. Blue indicates SD card is inserted.
- 11: Unlock sign: Click on the unlock sign and the password input interface appears. The password is "888888". If the password input was successful, the unlock sign will be switched to the unlocked state. Then the administrator mode can be accessed, in which the curve interface can be calibrated. At the same time the control menu can be accessed. Click on the unlock sign to lock it again, no password is needed for this.
- 12: Switch to a single module real-time curve interface.
- 13: Switch to a single module real-time curve interface.

Individual channel product parameters:

Click on the left and right arrows in box 12 and 13 to enter a single product query. The interface is as follows:

- 1: Real-time concentration values.
- 2: Product type, measuring range, concentration value, temperature and humidity.





Individual product parameter queries in administrator mode are as follows:

- 1: Real-time concentration values.
- 2: Product type, measuring range, concentration value, temperature and humidity.
- 3: Calibration function.
- 4: Restore the factory calibration settings.



Enter the Administrator mode:

Click on the bottom right corner of the screen . After entering the password (888888) press the "return" button to confirm. After unlocking , enter the administrator mode.



2 Main Menu Interface:

- 1: History function.
- 2: Wireless settings.
- 3: Equipment list and settings.
- 4: Alarm list.
- 5: OTA upgrade.
- 6: Switch language.
- 7: Return to IDLE.



3 History Curve Selection Interface:

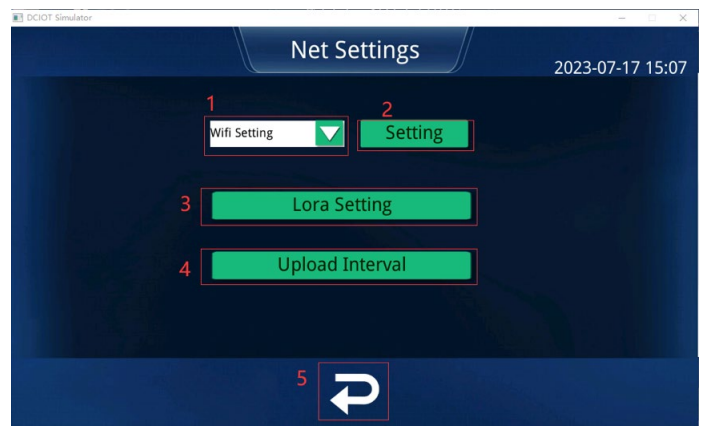
- 1: Select the sensor to be displayed.
- 2: Select the period to be displayed.
- 3: Enter the specific period.
- 4: Enter the specific curve display interface.
- 5: Return to the main menu.



4 Wireless Setup Interface:

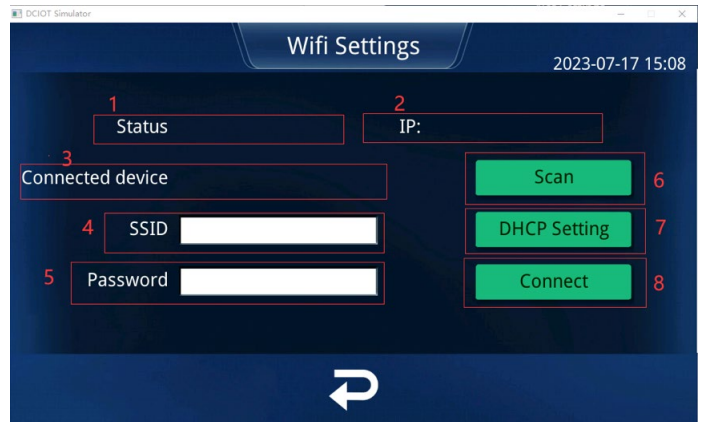
Only one setting can be selected between 4G and Wi-Fi. When one is started, the other is automatically turned off.

- 1: Wireless gateway selection.
- 2: Enter the Wi-Fi or the 4G setting interface according to the wireless gateway selection.
- 3: LORA set up.
- 4: Cloud data upload interval.
- 5: Return to the main menu.



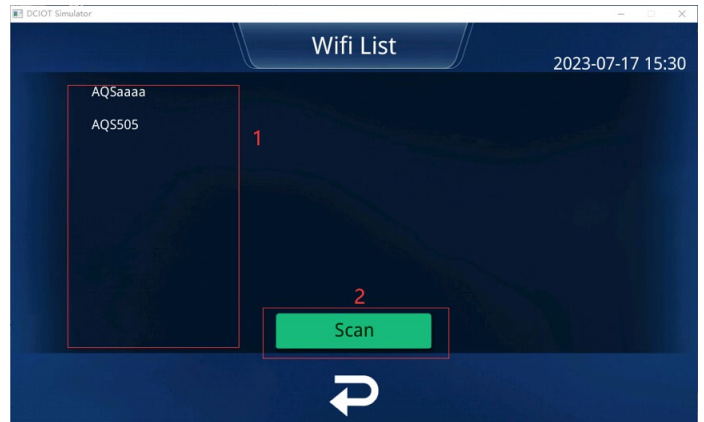
5 Wi-Fi Setting Interface:

- 1: Connection status.
- 2: After connecting to the Wi-Fi, the ECD controls the assigned address.
- 3: Name of the connected Wi-Fi.
- 4: Wi-Fi SSID.
- 5: Wi-Fi password.
- 6: Enter the Wi-Fi scanning interface.
- 7: Enter the DHCP setting interface.
- 8: Click to connect according to SSID and PASSWORD.



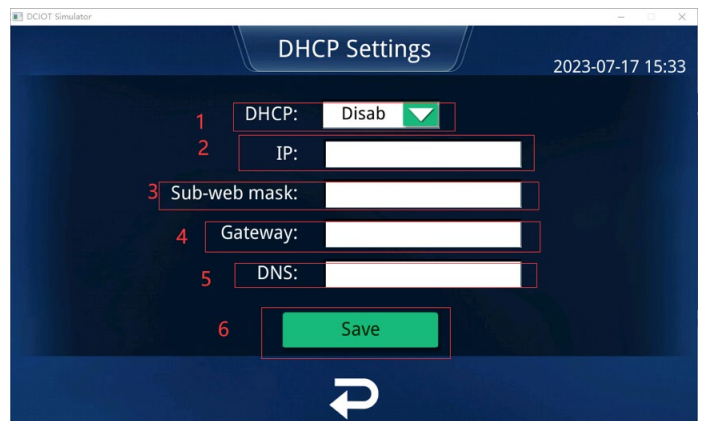
6 The Wi-Fi Scanning Interface:

- 1: Wi-Fi list: Click to select the Wi-Fi from the list and return to the Wi-Fi connection interface.
- 2: Wi-Fi rescan button.



7 DHCT Setting Interface:

- 1: To customize the IP, subnet mask, gateway and DNS, only if DHCP is disabled.
- 2: User-defined IP.
- 3: Input subnetwork mask.
- 4: Enter the gateway.
- 5: Import DNS.
- 6: Click "Save" to apply changes.

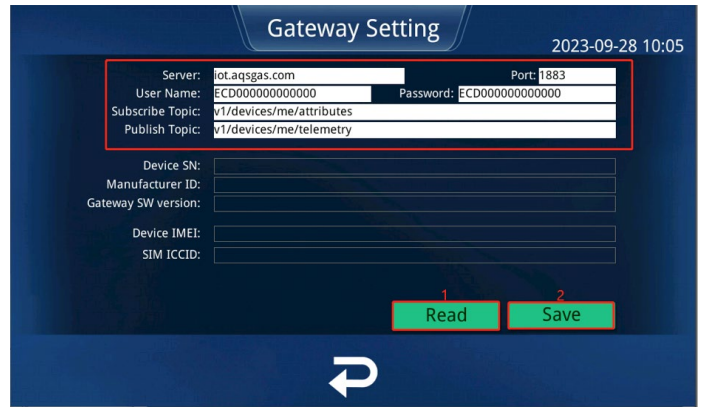


8 4G Setting Interface:

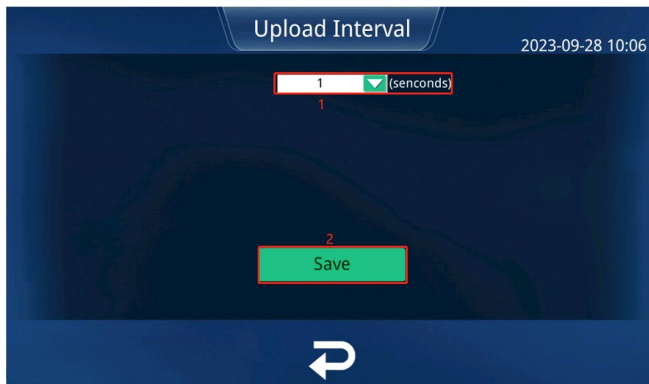
Each time you access this interface, enter the default parameters for convenience. If a modification is needed, please modify it according to your MQTT server configuration.

- 1: Read the parameters currently set, which automatically switch to 4G mode if in Wi-Fi mode.
- 2: Write the current parameter, which automatically switches to 4G mode if in Wi-Fi mode.

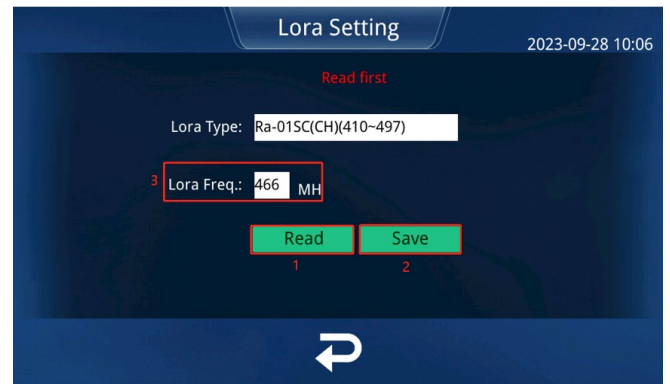
Note: the red box parameters can be configured.



9 Lora Setting Interface:



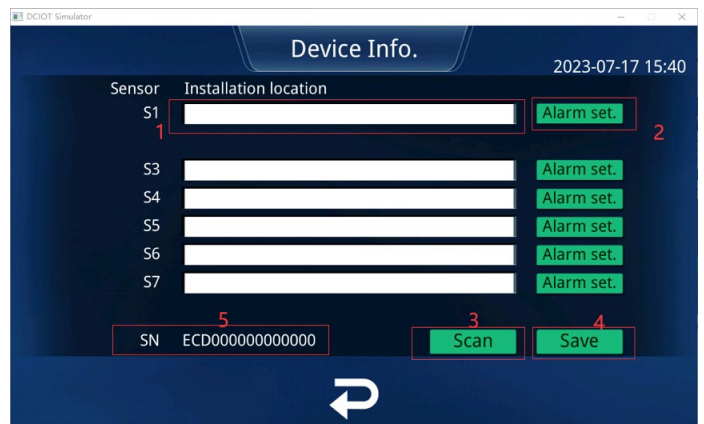
- 1: Select specific products and equipment.
- 2: Save and enter the device configuration.



- 1: Read the Lora type.
- 2: Save the Settings.
- 3: Set the Lora frequency.

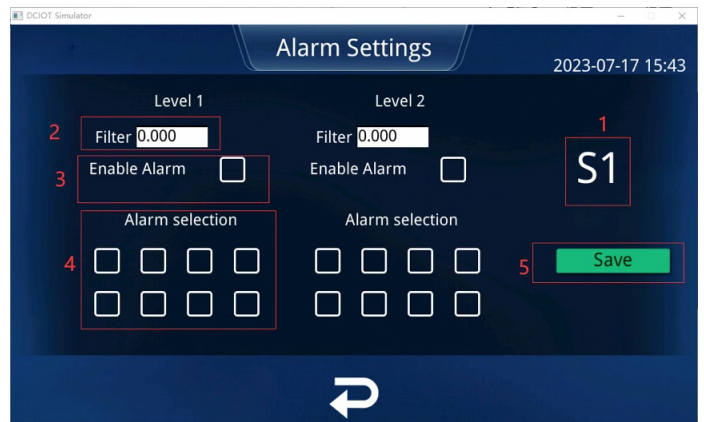
10 Equipment Refers to the Interface:

- 1: Enter the installation location of the device and click "Save" to apply changes.
- 2: Enter the alarm setting interface.
- 3: Scan the device again and click back to go to the IDLE interface.
- 4: Save the device address.



11 Alarm Setting Interface:

- 1: Sensor serial number currently set (corresponding to RS485 address).
- 2: Level 1 alarm threshold.
- 3: Enable alarm.
- 4: Corresponding to 8 relays, freely combined by the user.
- 5: Save alarm parameters.



12 Alarm Record Interface:

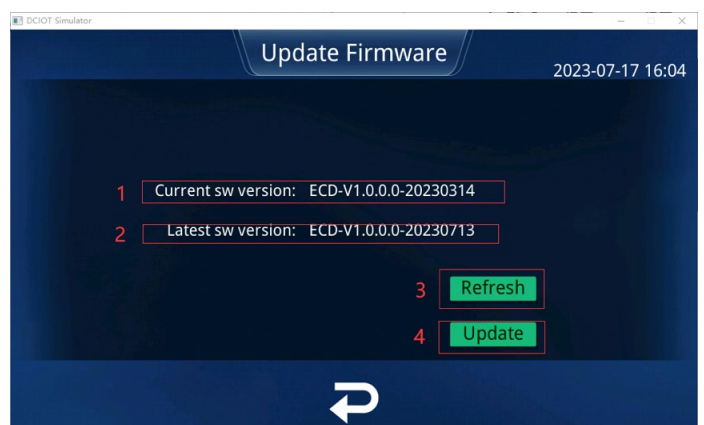
- 1: Alarm record: Specific information of the alarm.
- 2: Pauses the alarm for the duration of 10 minutes. If an alarm is still present after the set 10 minutes, it will continue to be triggered.
- 3: Cancel the alarm completely, there will be no more alarms.
- 4: Delete all the alarm records
- 5: Export alarm records to your SD card. File name begins with record.

For instance: record20120101000506.csv



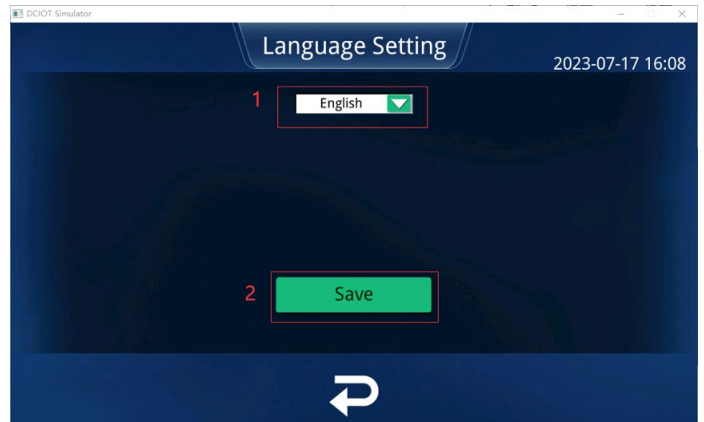
13 The OTA Interface:

- 1: Current software version number.
- 2: The latest software version.
- 3: Refresh for current and latest software versions.
- 4: Start update (This button is only displayed for the two different software version numbers).



14 Language Settings Interface:

- 1: Select your language
- 2: Save language settings



»» 7. Data Saved in SD Card

Mean value data format: Sensor<index>_average_<year>_history_data .CSV

For example: Sensor1_average_2023_history_data.CSV

Real-time value data format: Sensor<index>_real_time_<year>_history_data.CSV

For instance: Sensor1_real_time_2023_history_data.CSV

Use SD card upgrade software: Name the upgrade package "DCIOT.PKG", place it in the SD card folder, restart with the button and wait for the firmware update. After the update, remove the SD card and delete the "DCIOT.PKG" file. Insert the card back into the device and restart with the key button.

Disclaimer

The AQ Sense performance data stated above is based on data obtained under test conditions using the AQ Sense gas distribution system and AQ Sense test software. In the interest of continuous product improvement, AQ Sense reserves the right to change design features and specifications without notice. We are not responsible for any loss, injury or damage caused by this. AQ Sense assumes no responsibility for any indirect loss, injury or damage resulting from the use of this document, the information contained therein or any omissions or errors herein. This document does not constitute an offer to sell. The data it contains are for informational purposes only and cannot be considered a guarantee. Any use of the given data must be evaluated and determined by the user to comply with federal, state and local laws and regulations. All specifications outlined are subject to change without notice.

⚠ Warning

AQ Sense devices are designed for use in a variety of environmental conditions. However, due to the principles and characteristics of sensors and to ensure normal use, users must strictly follow this article during storage, assembly and operation of the device. Although our products are highly reliable, we recommend checking the device's response to the target gas prior to utilization to ensure on-site use. At the end of the products service life, please do not discard any electronics in the domestic waste, instead follow the local governments electronic waste recycling regulations for disposal.



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