Smart Digital-Process Gas Detector

DA-770-CO,CO_2

GASDNA

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1. Introduction

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DA-770-CO,CO2 gas analyzer is an analyzer consisting of a gas sampling device using an infrared method.

2. Feature

- Simultaneous and continuous measurement of gas concentrations of two components is possible.
- CO and CO2 gas concentrations are measured using infrared methods.
- Maintenance is possible from the back, saving installation space and making maintenance easy.

2. CO Product Specifications

Classification	Contents
Measurement gas	CO
Measurement principle	NDIR
Measurement range	0 ~ 3000 PPM
Response time	T90(within 45 seconds)
Detection method	Suction Type
Input power	AC 110~220 V
Suction flow rate	0.2 liter/min ~ 3 liter/min
Accuracy	≤ ±3% / Full Scale
Output signal	4-20mA DC/F.S
Display	7” TFT LED (800 X 480)
Alert display	1st alarm - AL1 LCD lamp(YELLOW)
	2nd alarm - LCD lamp(RED)
	Failure alarm - LCD lamp FAULT(RED)
Alarm value setting	AL1/AL2 2-stage alarm-user arbitrary setting
Alarm delay time	0~99 seconds user arbitrary setting
Alarm release	Manual and automatic return
Alarm output	2-stage(AL1/AL2) alarm RELAY CONTACT
Operating temperature	-10℃ ~ 60℃
Operating humidity	5 ~ 95%RH (Non-Condensing)
Installation method	Desktop
Gas intake	Female 1/4”
Output options	RS-485 communication
USB Host	USB 2.0 (Data log download)

3. CO_2 Product Specifications

Sortation	Contents
Measured gas	CO_2
Measuring principle	NDIR
Measuring range	0 ~ 5000 PPM
Response time	T90(within 45 seconds)
Detection method	Suction Type
Input power	AC 110 ~220 V
Suction flow rate	0.2 liter/min ~ 3 liter/min
Accuracy	≤ ±1% / Full Scale
Output signal	4-20mA DC/F.S
Display	7” TFT LED (800 X 480)
Alert display	1st alarm - AL1 LCD lamp(YELLOW)
	2nd alarm - LCD lamp(RED)
	Failure alarm - LCD lamp FAULT(RED)
Alarm value setting	AL1/AL2 2-stage alarm-user arbitrary setting
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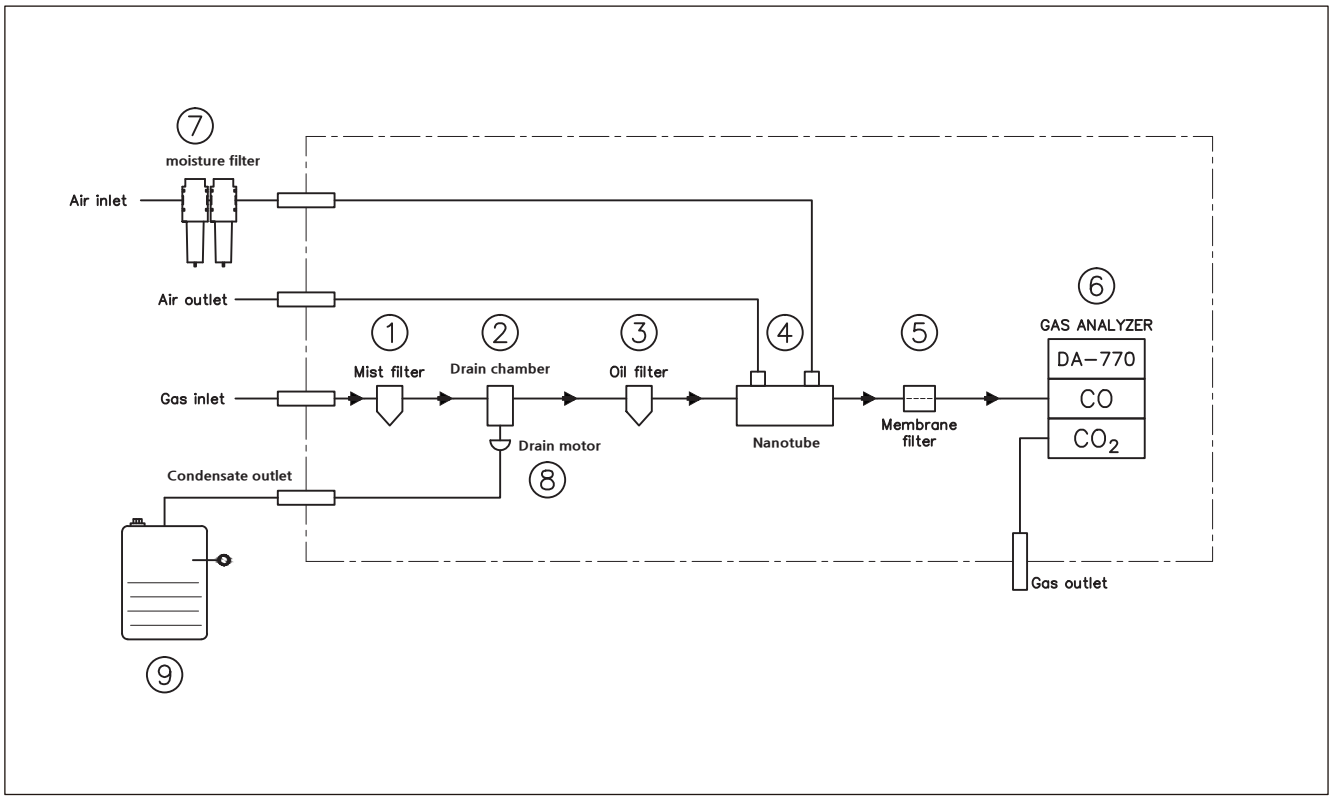
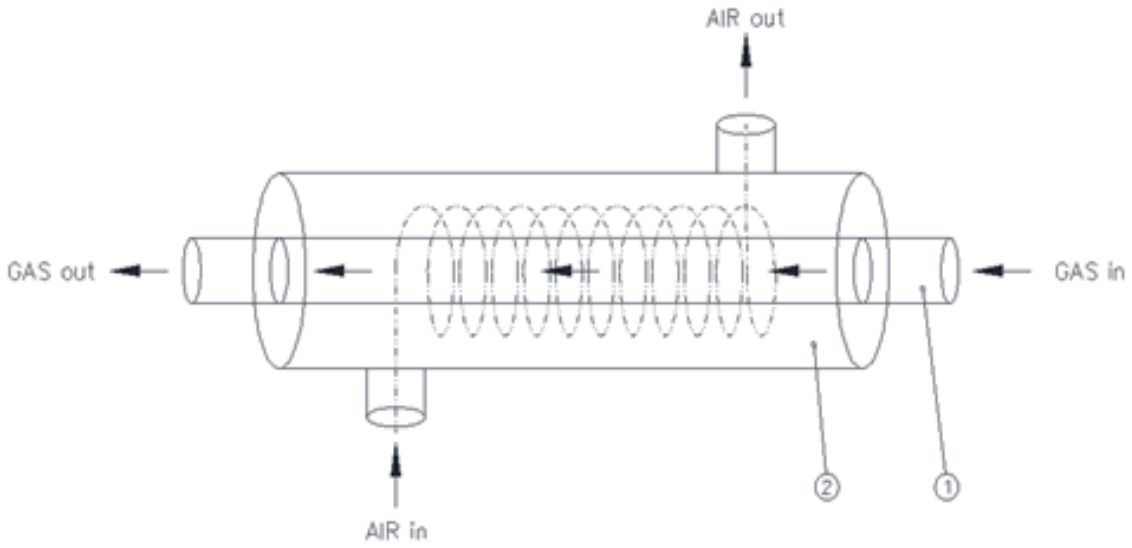
4. Gas Sampling System Diagram



1. Gas Sampling System Diagram Discription

① Filter to remove dust
② Chamber to hold water
③ Filter to remove dust
④ Tube to remove moisture once more
⑤ PTFE moisture filter (0.25㎛)
⑥ Gas analyzer
⑦ Filter to inject clean air without moisture

▷ Caution



Humidity Comparison	
Gas Tube Humidity>Air Tube Humidity	Moisture moves from the Gas tube to the Air tube
Gas Tube Humidity<Air Tube Humidity	Air tube humidity moves to GAS tube

(Caution) If you want to measure gas concentration accurately, you must fill the air tube with clean air that does not contain moisture.

⑧ Motor to release water to the outside

⑨ Drain water tank

5. Names and key functions of each part

1. Explanation of part names

① Cover Case

▷ Protects the sensors, pumps, and PCB boards installed inside from external impacts and environmental changes.

② Flow Meter

▷ Displays the flow rate of sample gas. Adjust the flow rate by the position of the BOLL.

③ Display(7”TFT 800X480)

▷ Displays the gas concentration value measured by the sensor and the setting parameters.

④ USB PORT

▷ USB PORT dedicated for DATA LOG BACKUP

⑤ Motor Power Switch

▷ Motor Power ON/OFF Switch

⑥ Sample Gas Out

▷ Sample gas vent port(1/4”)

⑦ Alarm Terminal + RS485 Terminal

▷ Fault, Alarm1, Alarm2 contact output, Terminal for data communication

⑧ 4-20mA Terminal(mA+,mA-)

▷ Terminal for connecting 4-20mA output.

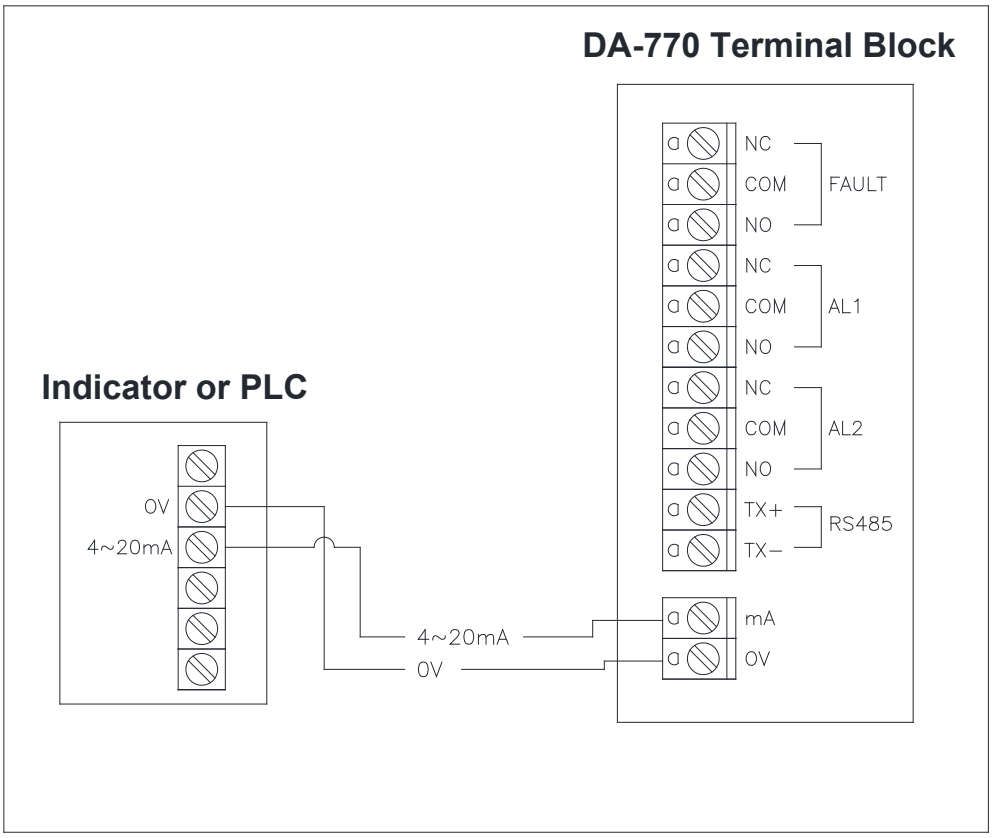
⑨ Sample Gas Inlet

▷ Sample gas inlet port (1/4”)

⑩AC Power Switch

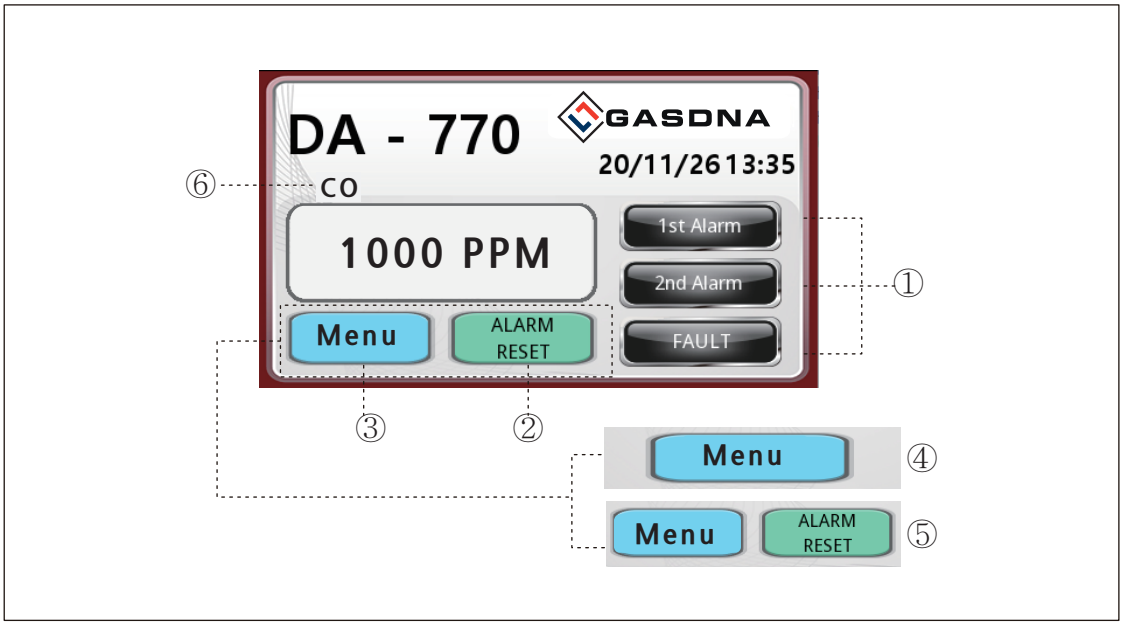
▷ AC Power ON/OFF Switch

2. Terminal block description



6. Display Configuration and Description

1. DA-770 MAIN



① Relay Alarm Display

▷ The lamp operates according to the detector alarm 1st and 2nd settings. In case of a failure, the lamp operates in Fault.

② Alarm Reset

▷ Resets the alarm and fault indicator lights that were triggered. This function is used only when the reset setting is configured to "manual."

③ Menu

▷ Go to the screen where you can select settings for the detector, data history, and charts.

④ Activate the menu button

▷ When selecting AUTO mode in the settings Alarm Reset mode, only the menu button is activated.

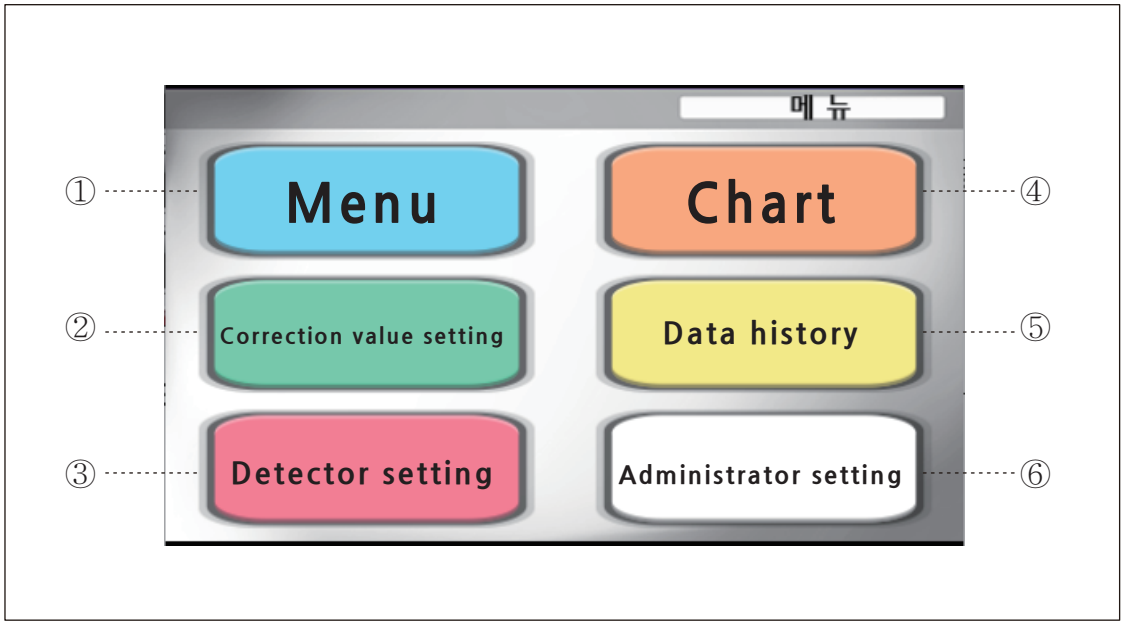
⑤ Menu and Alarm Reset

▷ When MANUAL mode is selected in the Alarm Reset setting mode, the menu and Alarm Reset buttons are activated.

⑥ Gas name

▷ This is an indication of the gas being detected.

2. MENU



① Main Screen

▷ Go to the DA-770 main monitoring screen.

② Setting the correction value

▷ Go to the screen for correcting analog ZERO and SPAN.

③ Detector Settings

▷ Go to the screen where the user can change the settings for the detector.

④ Chart

▷ Move to the screen organized in a chart graph format by concentration value.

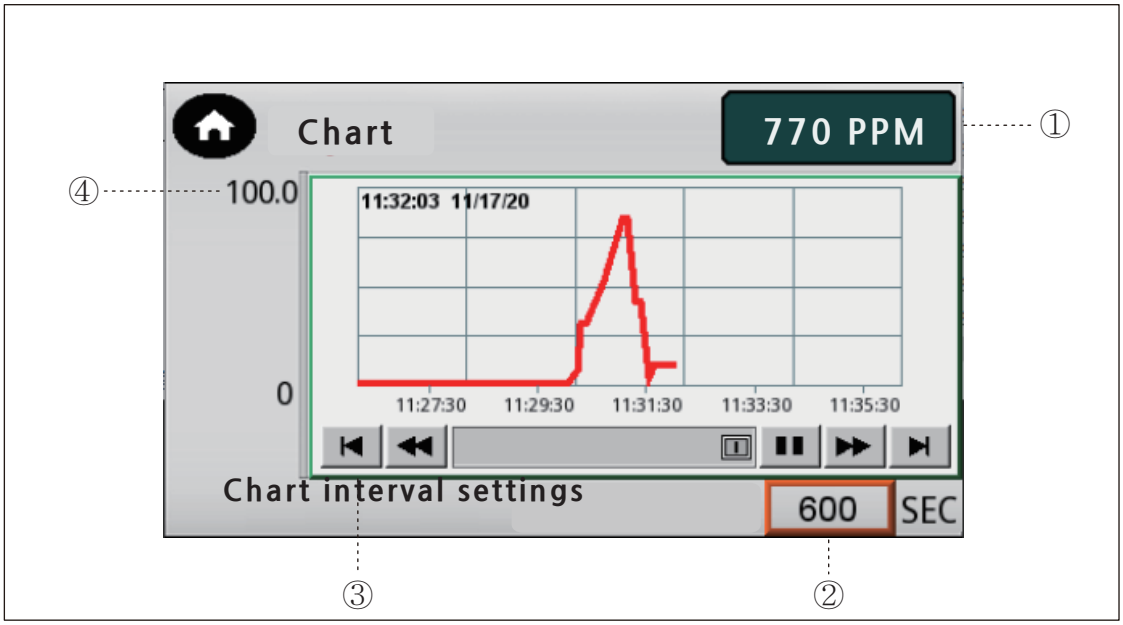
⑤ Data History

▷ Move to the screen that analyzes data on concentration values by time.

⑥ Administrator Settings

▷ Go to the settings screen for administrators only, not for users.

3. Chart



① Current concentration value

▷ Displays the current concentration value so that it can be compared with the chart.

② Chart section time setting

▷ You can check the time unit displayed on the chart with the set time zone.
The time unit is composed of SEC units, and the first time the product is booted is 1 minute intervals. (It is expressed as 0 until the setting is changed after booting.)
After changing the section setting, it is displayed in the changed time zone.

③ Chart

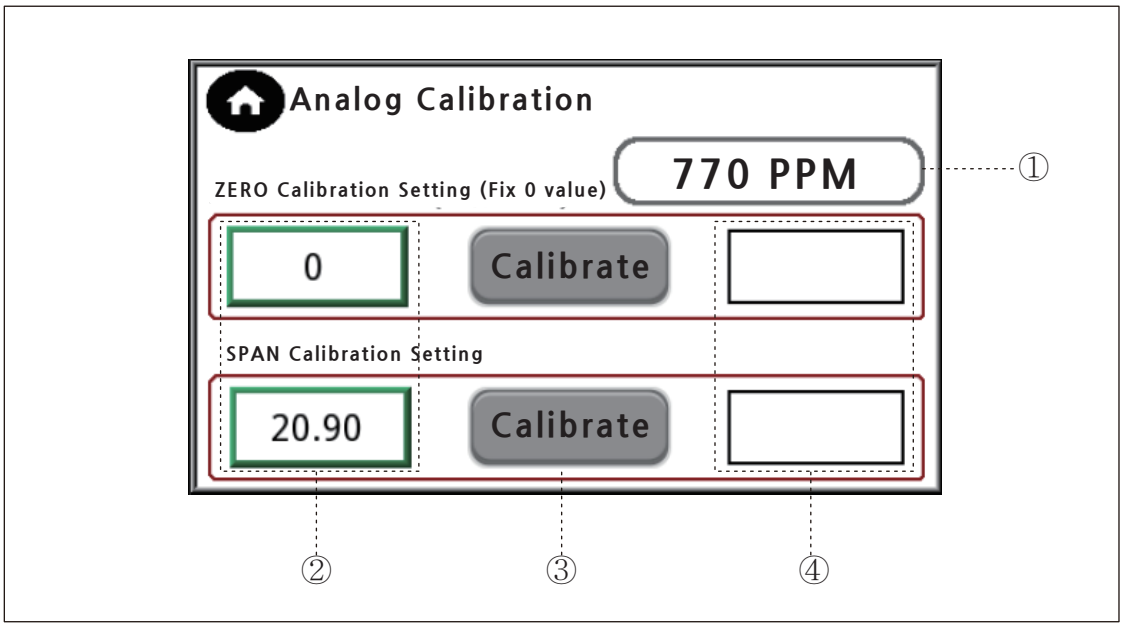
▷ Expressed in graph format according to concentration value.
The data cycle measurement time is 5 seconds, and the time to check past data is approximately 1 hour and 20 minutes.

④ Chart concentration maximum value expression

▷ This shows the maximum value for checking the concentration value on the chart.

4. Setting the correction value

This is a screen where you can perform ZERO and SPAN corrections based on the current concentration value.
Correction must be performed based on the current concentration value and the Check ZERO and SPAN values.

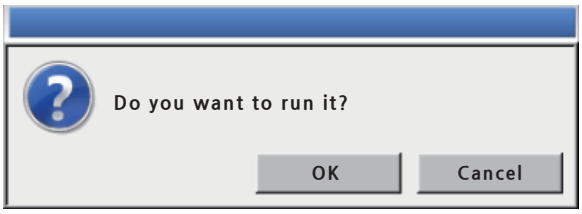


① This is the current concentration value.

▷ This is where you set the concentration value for sensor calibration.
When you click the button for the concentration value display, a keypad appears on the screen.
The current value appears on the keypad, and you can enter the value to change it.

② The ZERO correction setting value is fixed at 0,
and you only need to adjust the SPAN correction setting.

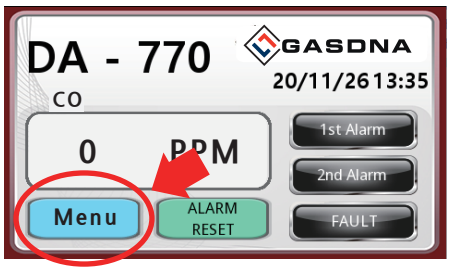
③ After setting the concentration value to be corrected, click the final correction button,
and then select OK in the confirmation message.

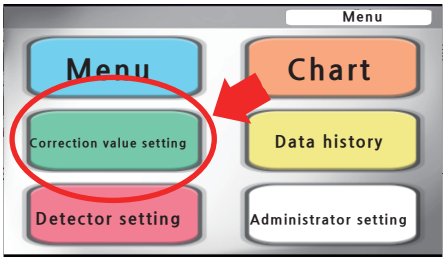


④ Displays the result values after ZERO and SPAN correction.

※ Correction should be performed at least once every three months.

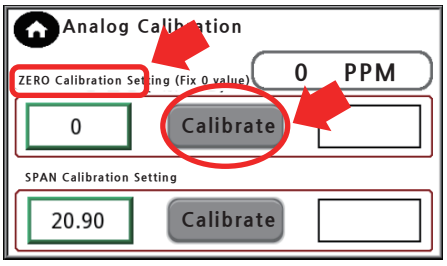
4-1. Correction order





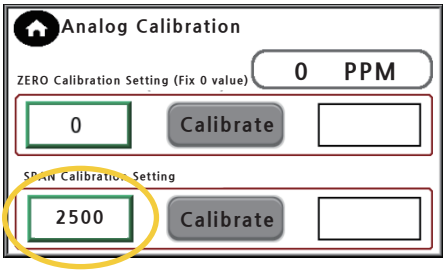
Click “Menu”.

Click “Set correction value”.



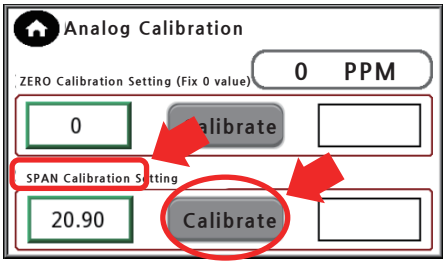
Connect the nitrogen gas and set the ZERO calibration.

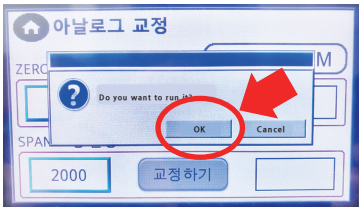
Press the “Calibrate” button and when the calibration is complete, press the “Confirm” button.



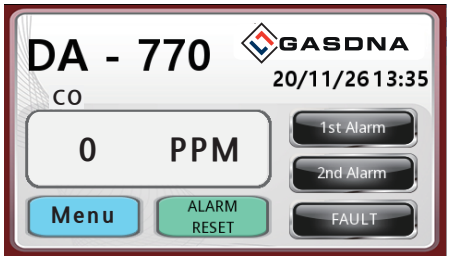
After connecting the standard gas for SPAN calibration, enter the concentration of the standard gas in the yellow circle and press Enter.

At this time, CO gas is calibrated with a standard gas of 2000 PPM and CO2 gas is calibrated with a standard gas of 2000 to 5000 PPM.



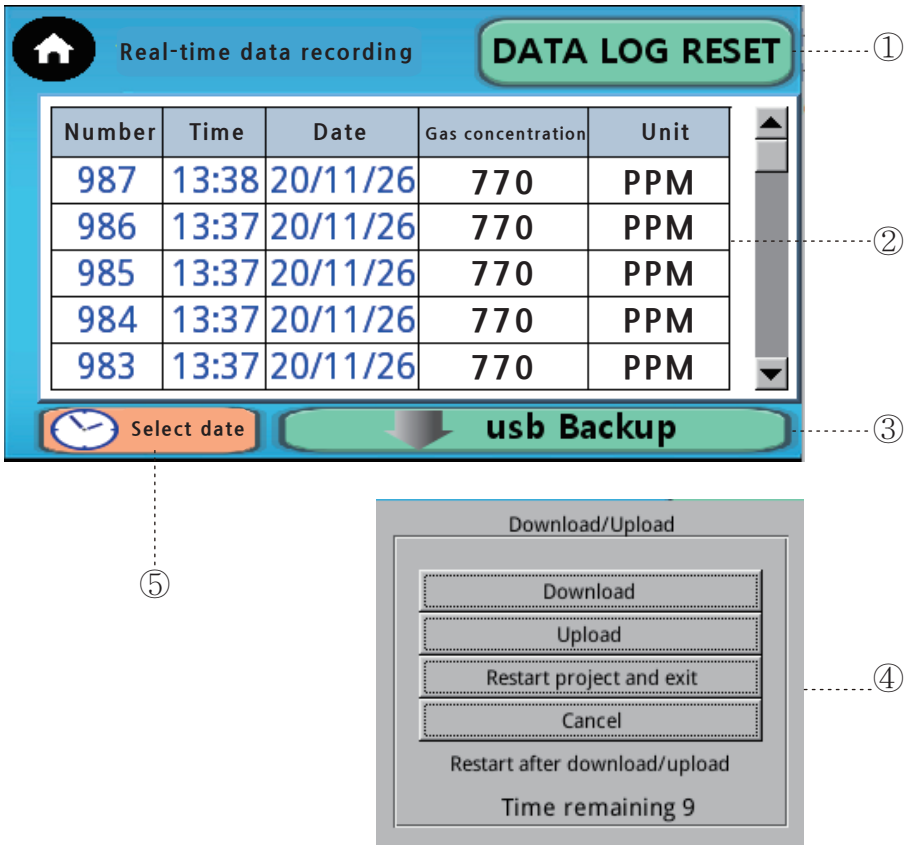


After clicking the “Correct” button, click the “Confirm” button when correction is complete.



Return to the home screen.

5. Data recording



① DATA LOG RESET

▷ Not only the data displayed in real time, but also the data records stored internally are deleted. If the data is reset, past data cannot be backed up.

② DATA LOG

▷ This is a screen that saves data by date and time zone in real time. Data is saved in 15-second units.

③ USB Backup

▷ You can load past history data as an Excel file using USB.
Connection method (USB port terminal - System recognition (content 4)
- Click USB backup button) USB path (USB / datalog / DA-770 LOG / Excel file)
Backup files are stored in the internal memory, so up to 10 days of data can be loaded.

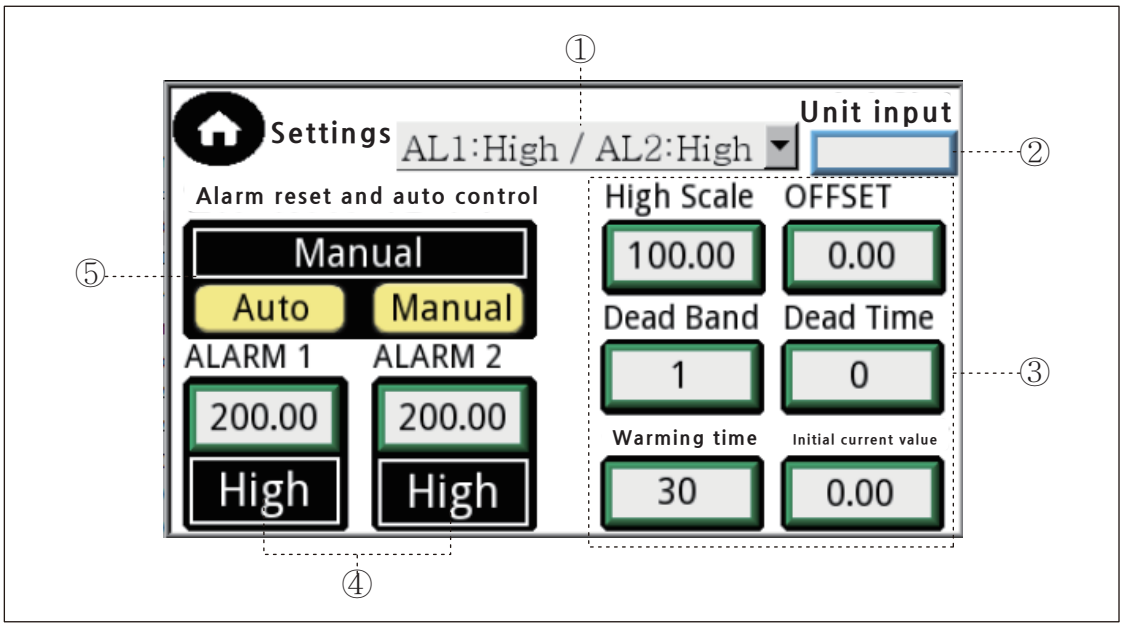
④ USB connection system

▷ When you connect the USB, the system window should pop up to indicate that the connection is complete. The system window will disappear if you cancel it or after 10 seconds.

⑤ Date selection

▷ You can select and check the past history in real time.

6. Detector Setting



① ALARM TYPE

▷ High and Low settings for ALARM 1,2
High - Operation above alarm setting value / Low - Operation below alarm setting value

② Data log unit display

▷ Unit input for display in data history log must be specified at first boot

③ High Scale

▷ Set 20mA compared to Full Scale

OFFSET

▷Adjusting the error for the measurement value

Dead Band

▷Invalid range for alarm return recognition

Dead Time

▷The time elapsed after the alarm is recognized until the change in relay output is recognized

Warming Time

▷Time specified for initial current to stabilize

Initial current value

▷Current value displayed during warm-up time

④ ALARM Setting

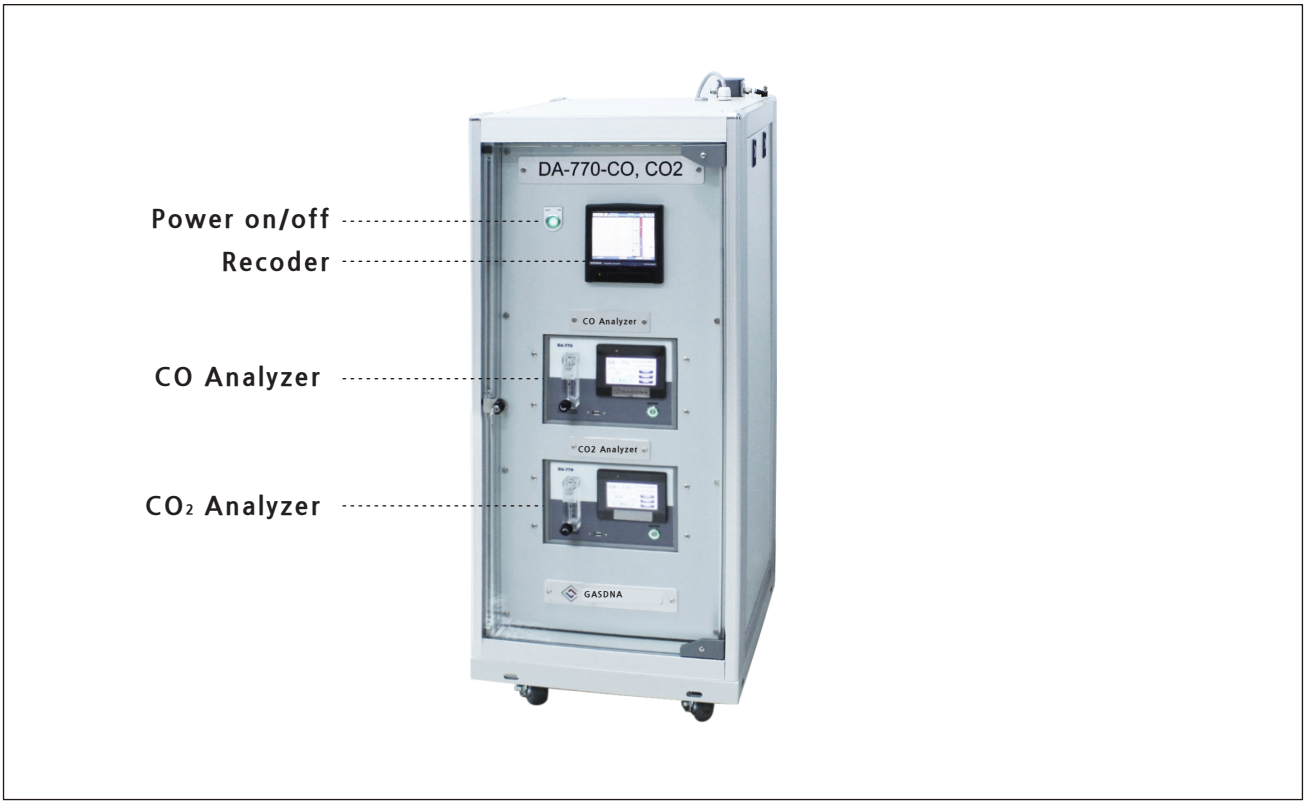
▷ Numerical setting for ALARM1/2
Example) When setting ALARM TYPE H&H and numerical value 23 for AL1
AL1 operates when the display value is 23 or higher

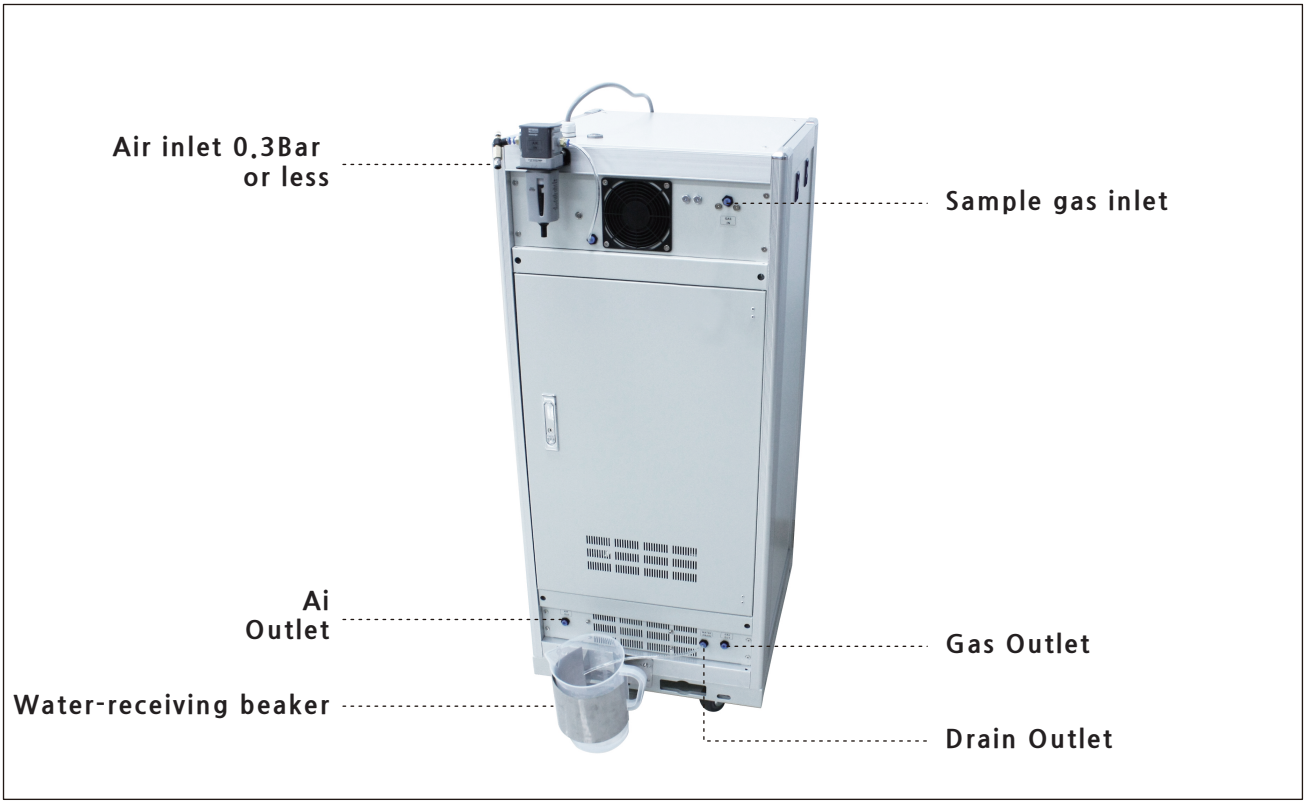
⑤ Alarm reset and automatic control

▷ AUTO - Motor control is always in operation. ② and ③ values rise, an alarm occurs, and the operation is performed, and then it is automatically released when the value returns to normal.

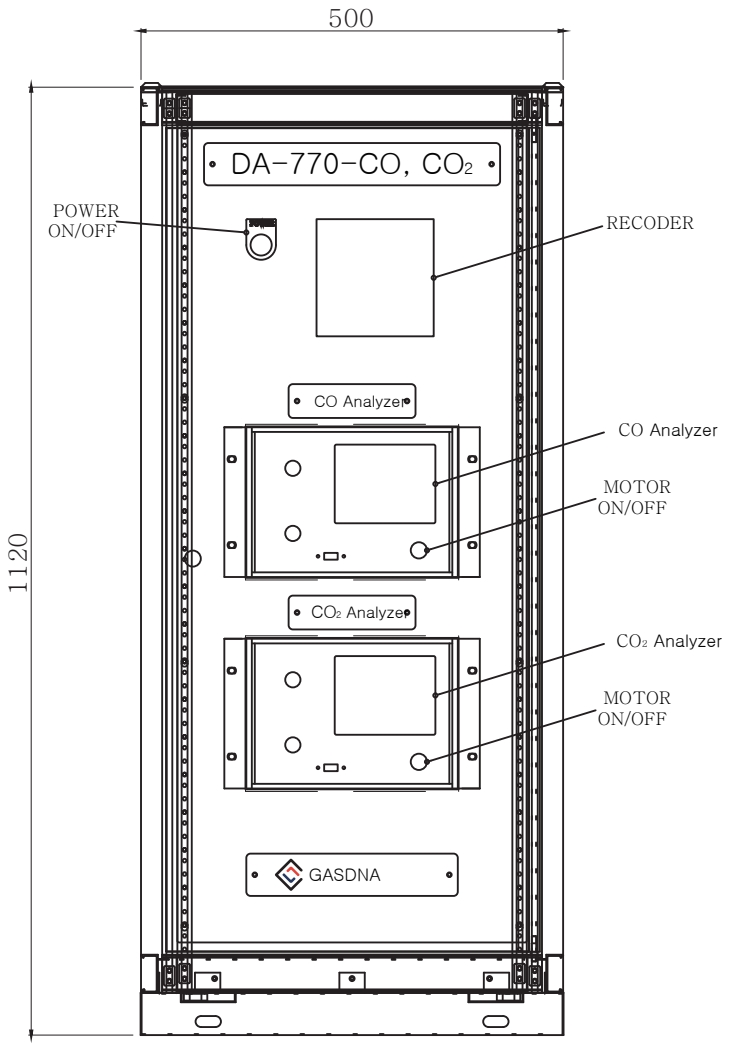
▷ MANUAL - Press the motor button to operate. When the value rises and an alarm occurs and then returns to normal, the user must RESET from the main screen.

7. Part of Product

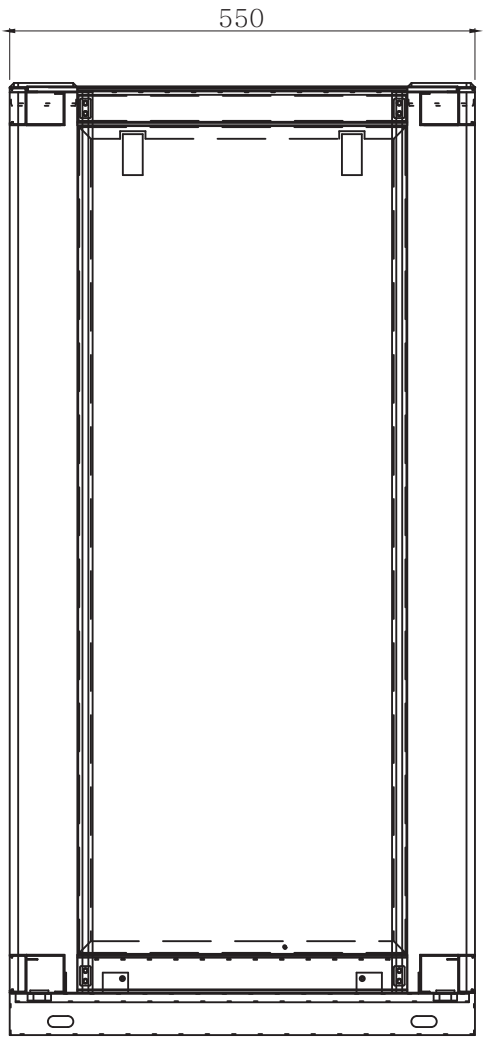




8. External dimensions



Front View



Side View