

# 4 -Channel Gas Detector Monitoring Unit

# GMS-1700



**GASDNA Co.,Ltd** 101, Bukhang-ro 193beon-gil, Seo-gu, Incheon, 22856, Republic of Korea  
Tell: +82-32-584-7420 Fax: +82-32-584-7424 E-mail: sales@gasdna.com Web: www.gasdna.com

<http://www.gasdna.com>

## 1. Product overview

GMS-1700 is a multi-point gas alarm that is connected to a plurality of gas detectors to monitor gas leakage in a complex way. Each detector installed in the field is connected 1:1 with the receiver in the integrated panel and transmits the concentration signal to the central monitoring unit at the same time.

The GMS-1700 outputs and transmits a RELAY OUTPUT, 4-20mA standard current signal to implement comprehensive gas monitoring. Through this, it is possible to build an integrated monitoring environment with external devices such as PLC/DDC, various RECODERS, and COMPUTER.

### 2-1. Product Features

- Multiple detectors and receivers are concentrated in one place in a 1:1 connection method, respectively, and it is a multi-point receiver that performs the integrated monitoring function.
- Simultaneously receive 4-20mA analog continuous signals from multiple detectors and use high-resolution A/D converters Accurately represent digital signals.
- By programming various functions with the microprocessor, the user's arbitrary monitoring environment can be built.  
(Ex. AL1, AL2 Alarm Range, AL1, AL2 Alarm Delay Time setting, etc.)
- An external warning light is used to maximize the visual effect of the alarm function.
- High-resolution D/A converter outputs 4-20mA standard current signal and transmits accurate signal to external controller (PLC/DDC).
- In case of AL1, AL2 alarm, AL1, AL2 Relay Output function is provided for interworking with FAN and external alarm device.
- It is a product with a built-in lithium-ion battery.

## 2-2. Main Strengths

### High iatitude 1.8 inch dual color LED display.

The GMS-1700 is equipped with a numeric LED display with a character height of 1.8 inches(45mm). In case normal green alarm, it is displayed in orange and red.(Blinleing)



### High alarm visibility!



※ AL1. Orange alarm  
AL2. Red alarm  
(normally green)

### Built-in Battery!

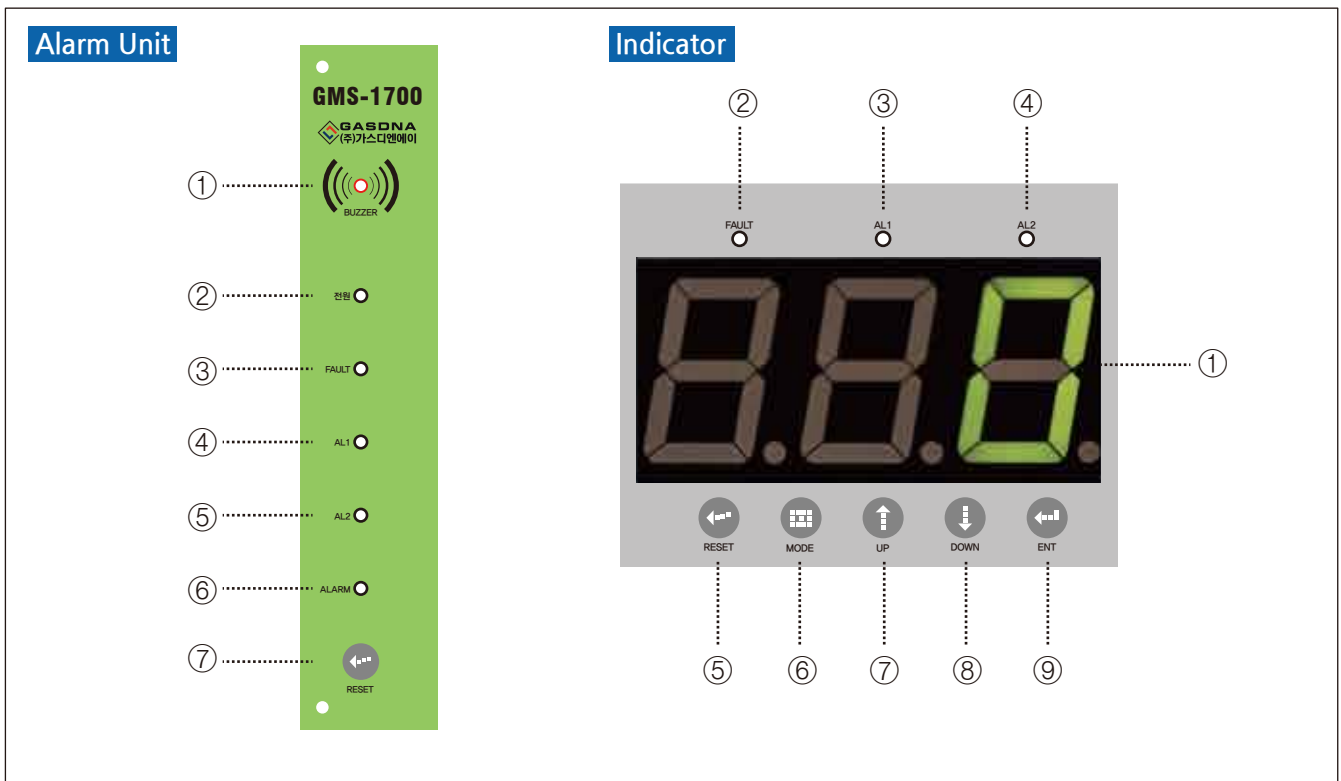


Ensures full operation even in the event of a power loss.

### 3. Specification

division	Contents
Installation Method	wall-mounted
Control Structure	Alarm UNIT: 1, Receive Unit: 4
Detector Connection type	For multi-point type (4 connected detectors)/4 circuit
Input Power	AC100~240VAC/60Hz
Battery Power	DC24V 2.5AH
Input Signal	4-20mA DC/F.S
Output Signal	4-20mA DC/F.S
Out Voltage	24 V (5 A)
Alarm Signal	Low Alarm - AL1 (RED)
	High Alarm - AL2 (RED)
	Failure alarm - FAULT LED (YELLOW)
Alarm Method	Time - LED blinking
	Hearing - Buzz Bass (over 80dB)
Alarm Value Setting	AL1, AL2 2-stage alarm-user arbitrarily set
Alarm Delay Time	0~99 sec user arbitrarily set
Clear Alarm	Manual and automatic return
Alarm Output	2-stage (AL1, AL2) alarm RELAY CONTACT
Operating Temperature	-10℃ ~50℃
Operating Humidity	5~95%RH (Non-Condensing)
Display	3 color 1.8 inch 3 - Digit 7 Segment. Normal(Green), AL1(Orange), AL2(Red) ※ Blinking

## 4. Function and Name



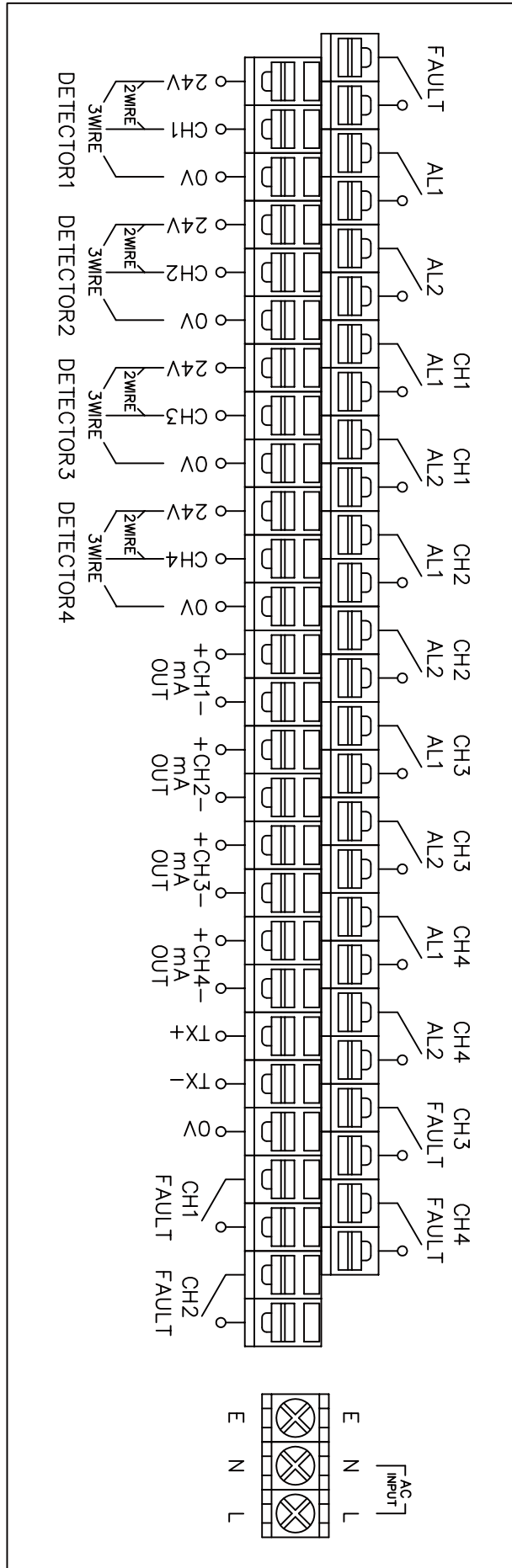
### Alarm Unit

- ① Buzzer : A Buzzer sound of 80 dB or more is generated during an alarm.
- ② POWER LED : Main power supply status. (Normal-ON, Disconnected-OFF)
- ③ FAULT LED : On when disconnection occurs between INDICATOR and DETECTOR
- ④ AL1 ALARM LED : Turn on when concentration above the AL1 ALARM setting is detected.
- ⑤ AL2 ALARM LED : Turn on when concentration above the AL2 ALARM setting is detected.
- ⑥ ALARM LED : Flashes during an alarm to visually indicate whether it is an alarm or not.
- ⑦ RESET : After recognizing whether an alarm is present, stop the alarm sound.  
At this time, the ALARM LED keeps blinking.

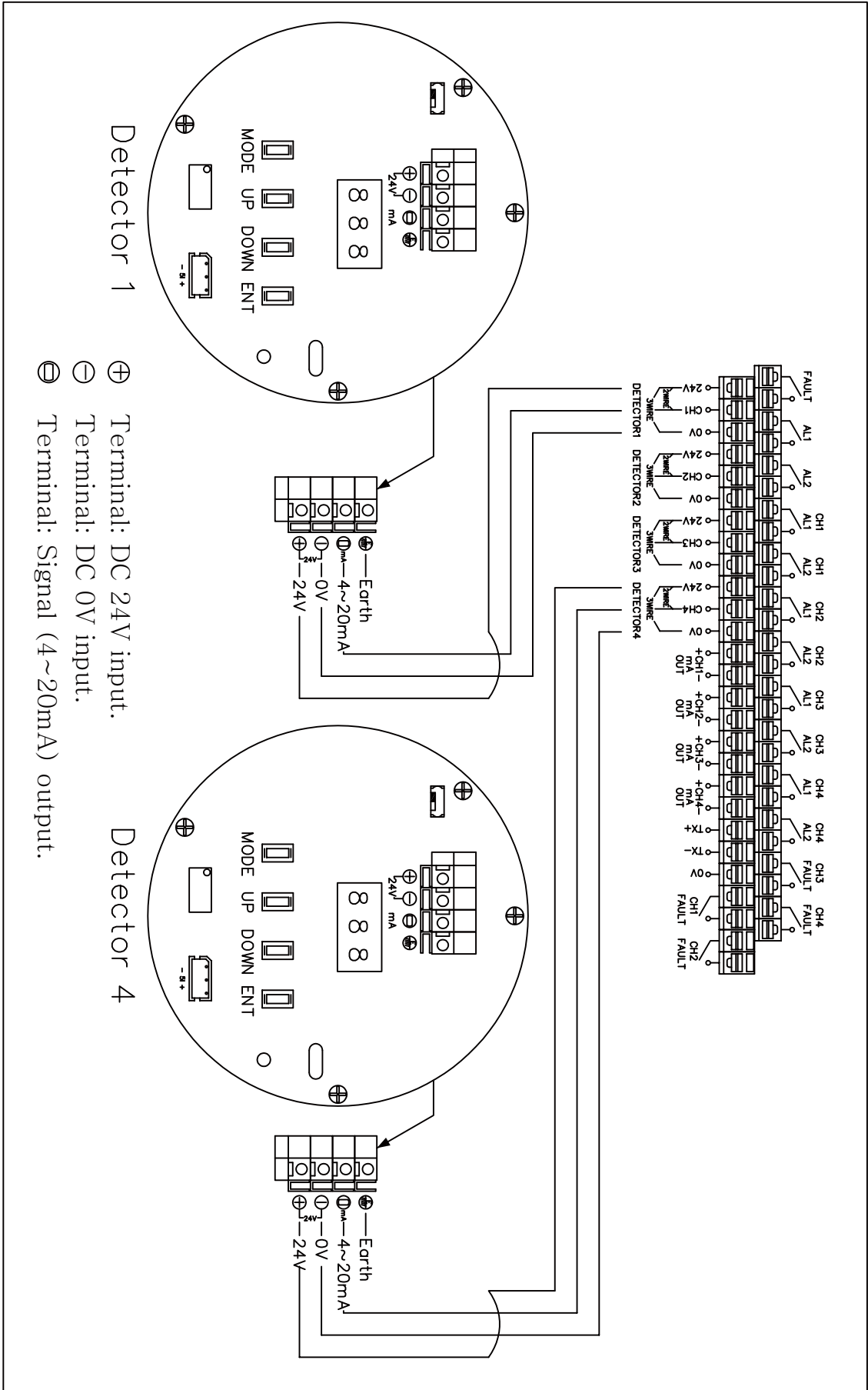
### INDICATOR

- ① FND : Display the received concentration signal digitally. (3 digits)
- ② FAULT LED : On when disconnection occurs between INDICATOR and DETECTOR
- ③ AL1 ALARM LED : Turn on when concentration above the AL1 ALARM setting is detected.
- ④ AL2 ALARM LED : Turn on when concentration above the AL2 ALARM setting is detected.
- ⑤ RESET : Manually return the alarm of the corresponding INDICATOR (when selecting the alarm release function from the menu)
- ⑥ MODE KEY : Select the program menu setting mode.
- ⑦ UP KEY : Set the rising value when setting the program menu.
- ⑧ DOWN KEY : Set the descending value when setting the program menu.
- ⑨ ENT KEY : Press to save input value when setting program menu.















## 5. Terminal Description



## 6. Wiring method (detector ↔ receiver)



## 7. Menu Description

menu		Explanation
USE		Select whether to use DETECTOR (ON/OFF)
dP		Decimal point position of digital density display (Ex. 20.0 or, 200)
HSC		20mA setting compared to FULL SCALE.
A1y		AL1 Alarm operation indication H&H: Alarm operation over set value L&L: Alarm action below set value
AL1		AL1 alarm value setting menu.[AL1 ALARM]
A2y		AL2 alarm operation indication H&H: Alarm operation over set value L&L: Alarm action below set value
AL2		AL2 alarm value setting menu.[AL2 ALARM]
d.bd		Alarm relay hysteresis value setting. [DEAD BAND] (0~99)
d.ti		Alarm relay DEAD TIME setting. [DEAD TIME] (0~99 seconds).
oF.S		Adjustment of error for measured value. [OFFSET] (0 to 99)
A.rE		Alarm release function selection menu - Manual/automatic release selection
		※ Auto - Auto release setting menu [AUTO]
		※ HAd - Manual release setting menu [HAND]
l.ti		System initialization time when initial power is supplied. [INITIAL TIME] (0~99 seconds)
Adr		Communication station number setting. [ADDRESS] (0~99)
bAu		Communication baud rate setting. [BAUD RATE] (4800,9600,19200,38400,57600)

### ■ Alarm test function

※ TEST : Test whether the alarm works.

\* How to set: Press (UP) and (DOWN) simultaneously and continuously.

- As long as the two buttons are continuously pressed, the value increases continuously and stops when it reaches the highest value within the detection range.
- When the value passes the alarm setting value, AL1 and AL2 alarms are automatically generated.



## 8. Menu setting

order	menu	Select/Pass	menu value setting	save button
1) If you press (MODE)Key to enter menu setting mode, the first menu (dP) appears. After that, if you press (MODE)Key repeatedly, the menus appear in the following order. 2) At this time, the menu selection is determined by the (ENT) key.				
1	USE			
2	dP	(ENT)	Decide the decimal point position with the (UP) or (DOWN) key	(ENT)
3	HSC	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
4	A1y	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
5	AL.1	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
6	A2y	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
7	AL.2	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
8	d.bd	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
9	d.ti	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
10	OFS	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
11	A.re	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
12	l.ti	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
13	Adr	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
14	bAu	(ENT)	Set the value with (UP) or (Down) Key.	(ENT)
※ Press (RESET) Key to change to normal mode.				
※ To go to the next menu without setting values in the priority menu, press the (MODE) Key.				
※ To go to the next menu without setting values in the priority menu, press the (MODE) Key.				
※ EX) AL1 Setting: 1) Press the (MODE) key 4 times to display the AL1 menu. 2) Press (ENT) Key. 3) Set the value with (UP) or (Down) Key. 4) Press (ENT) Key to save the value and switch to the next mode.				

## 9. Menu Details

### (1) USE

- Select whether to use DETECTOR (ON/OFF)

### (2) dp (concentration value decimal point setting)

- Change the decimal point according to the measurement range.

### (3) HSC

- 20mA setting compared to FULL SCALE.

(ex) SCALE: 100 when

4mA analog input ----- 0 Display

20mA analog input ----- 100 Display

### (4) A1y

-AL1 Alarm operation indication

H&H: Alarm operation over set value

L&L: Alarm action below set value

### (5) AL.1-AR (AL1-ALARM)

- Alarm output according to A1y setting.

### (6) A2y

-AL2 alarm operation indication

H&H: Alarm operation over set value

L&L: Alarm action below set value

### (7) AL.2 (AL2-ALARM)

- Alarm output according to A2y setting.

### (8) d.bd (ALARM DEAD BAND)

- function keeps the relay output ON/OFF near the alarm set value.

A function that gives a hysteresis value

(ex1) In case of AL-1-AR: 20, A1y: H&H, D-BAND:3

→ When the display value is 20 or more, ALARM ON ↔ In case of 17 or less, ALARM OFF.

(ex2) In case of AL-1-AR: 20, A1y: L&L, D-BAND:3

→ When the display value is less than 20, ALARM ON ↔ In case of 23 or more, ALARM OFF.

### (9) d.ti (ALARM DELAY TIME)

- This function is a menu to prevent the occurrence of instantaneous malfunctions due to external shocks or noises, etc., when the detector does not operate normally.

(ex) In case of alarm value: 50, DEAD TIME: 5.

→ If the measured value is maintained over the alarm set value for more than 5 seconds, it is recognized as an alarm value.

**(10) OFS (offset)**

- The error of the measured value generated by the sensing unit is corrected by addition or subtraction.  
(ex) OFFSET: When setting +5.  
→If the output error is -5 from the sensing unit, the actual display indicates -5, but Calibrate OFFSET by +5 to zero the display.

**(11) A.rE (reset type)**

- ALARM relay or buzzer control method.
- Select AUTO (automatic) ↔ HAND (manual).  
<1> AUTO (automatic): The relay, buzzer, and status LED change according to the set value regardless of the reset switch.  
<2> HAND (manual): Relay, buzzer, and status LED change only when the reset switch is pressed.

**(12) I.ti (Init time)**

- Set the initialization time when power is supplied.

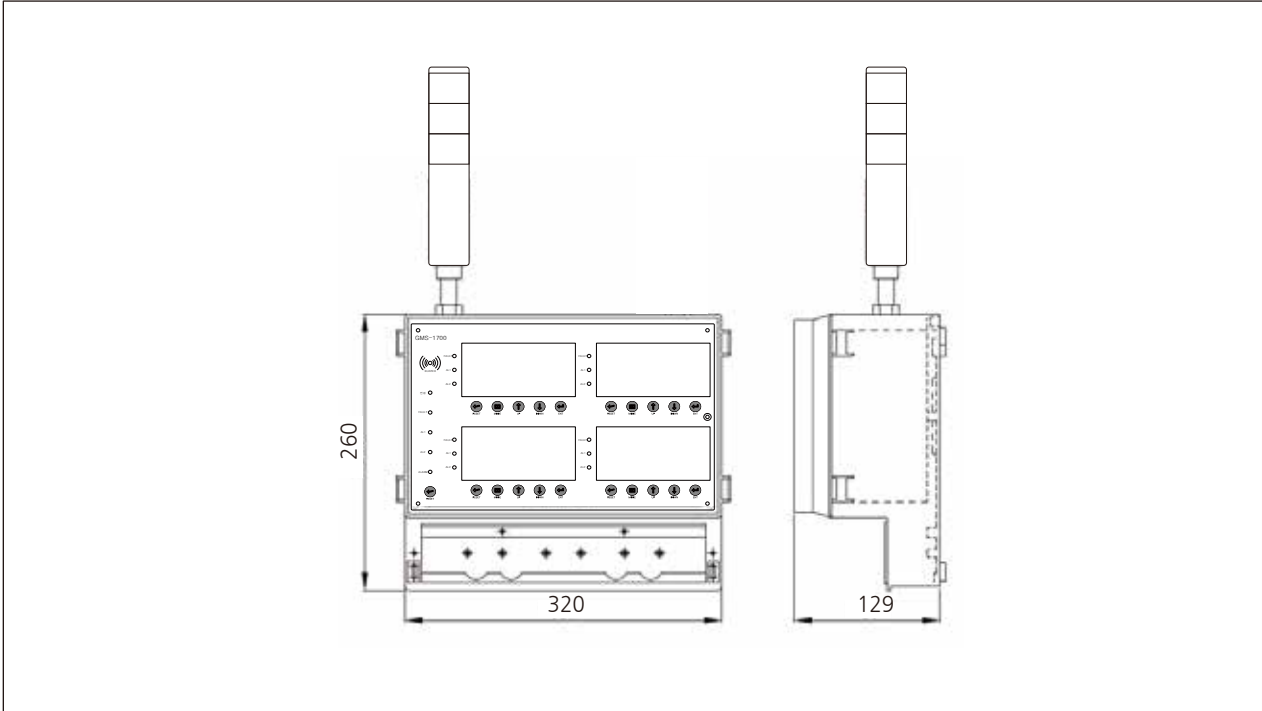
**(13) Adr (Adress ID)**

- RS-485 station number setting

**(14) bAu(Baudrate)**

- RS-485 baud rate setting

## 10. Dimensions



## 11. Precautions

- This product is a product with a built-in battery. Danger of explosion in case of impact.
- Power is OFF when shipped. It must be used after changing to ON after installation. (see photo below)



**ON/OFF  
switch**



**battery**  
(Be careful not to  
apply shock)