GDS ENGINEERING

2026 / TECHNICAL MANUAL

CC-200

Combustible gas detector manual

Installation, wiring, calibration and maintenance

Installation / Operation / Maintenance

Revised 02 Nov 2026

Verify the delivered model, gas, range and options before use.

gdseng.co.kr 031-731-0218

Before use

01 Confirm the delivered configuration

Verify the gas, sensor, measuring range, power supply and nameplate. The same enclosure may be supplied with different sensor and circuit options.

02 Control the work area

Only trained personnel should install, connect, calibrate or service the detector. Isolate power before opening or wiring. Do not open the enclosure while energized or where an explosive atmosphere may be present.

03 Manage alarms and interlocks

Notify the responsible personnel before calibration or current testing. Follow the site procedure for interlock management and alternative gas monitoring. A muted or reset alarm does not establish a safe atmosphere.

04 Restore normal protection

Remove test gas and test equipment. Verify normal detection, current output, alarms and interlocks. Record the settings and test results.

> Use the certification, temperature class and entry thread marked on the delivered unit. Historical documents contain inconsistent T5/T6 and terminal descriptions.

Product and specifications

The CC-200 is a diffusion gas detector that converts the installed sensor signal to a 4-20mA output. The standard combustible-gas configuration in the source uses a catalytic sensor.

Item	Specification
Gas / range	Combustible gas / 0-100% LEL, as delivered
Principle	Catalytic combustion / diffusion
Power	24V DC, 0.5A
Output / load	4-20mA DC / 0-500
Accuracy / repeatability	±5% F.S. / ±1% F.S.
Response	Less than 60 seconds, source conditions
Dimensions / mass	98(W) × 195(H) × 85(D)mm / 0.6kg
Mounting	Wall or pole mounting
Temperature reference	Standard -10 to +40°C; maximum -20 to +50°C in the source. Certification and sensor limits also apply.

> F.S. means full scale. The 9.3mA alarm example in the old manual is not a universal alarm setting. Use the approved site gas-alarm limits.

Sensor and adjustment points

Part	Function
Housing / sensor holder	Protect and retain the circuit and sensor
Check point	Monitor output during adjustment. Confirm whether this board uses mA or mV.
ZERO trimmer	Adjust the output under the specified zero-gas condition
SPAN trimmer	Adjust sensitivity using certified target calibration gas
4mA level switch	Service adjustment of the output reference
Power / Fault LED	Green for normal power; fault indication for sensor, cable or circuit problems

ZERO

Zero reference
Specified zero gas

SPAN

Sensitivity
Certified span gas

CHECK

Output check
mA / mV by board

Functional overview; board photographs are in the reference appendix.

Catalytic sensors detect the resistance change caused by catalytic oxidation. Semiconductor variants measure the change in conductivity. Only apply the principle and service procedure for the installed sensor.

Installation and connection

Select the location using potential leak points, gas density, ventilation and service access. Avoid vibration, strong electrical noise, dust, oil mist, condensation and direct liquid exposure. Use mounting hardware, cable glands and plugs suitable for the delivered certification and environment.

Label	Connection
+ / V+	24V DC positive
- / V-	Power negative / signal common
S	4-20mA signal

> The table describes signal functions, not a universal terminal order. Original documents use different terminal numbers for different circuit types. Follow the actual board labels and delivered wiring drawing.

Output measurement

The source describes 4-20mA test points for the current-output variant and 40-200mV check points for a voltage-monitor variant. Select the correct meter range and test connection for the board. Do not connect an ammeter directly across a power supply.

System terminal reference

The old system drawing includes the following numbered connections. This is a reference for the corresponding system board, not the three-terminal detector connection above.

No.	Source designation
1 / 2	24V DC input (-) / (+)
3	Alarm signal
4 / 5	Alarm contact
6 / 7	4-20mA (-) / (+)
8 / 9 / 10	Sensor (-) / (+) / (S)



Functional grouping only; match numbers to the delivered board. Physical layout may differ.

Zero and span calibration

01 Preparation

Confirm the installed sensor and target gas. Use valid certified calibration gas, the correct calibration cap, tubing and flow regulator. Allow the sensor to stabilize and manage interlocks before adjustment.

02 ZERO

Apply the specified clean zero gas at the source flow of 500mL/min for 2-3 minutes and until stable. Adjust ZERO to the appropriate 4mA reference. For a voltage-monitor board, use its specified equivalent check voltage.

03 SPAN

Apply the certified target span gas at the specified concentration, using the correct flow and cap. The source procedure uses 500mL/min for 2-3 minutes and until stable. Adjust SPAN until the measured output corresponds to the gas concentration.

04 Verification and restoration

Remove span gas, allow the output to return, then verify zero and span again. Confirm the receiver scale, alarms and interlocks, and record the gas certificate and results.

> Clean air/zero gas is used for ZERO. A known target gas concentration is used for SPAN. Do not use oil or an unspecified gas for calibration.

Output check and service adjustment

For a linear 0-to-full-scale 4-20mA configuration:

> I (mA) = 4 + 16 × C / F.S.
> Example: 50% of the configured full scale corresponds to 12mA.

4mA reference adjustment

The original procedure holds the 4mA level switch while adjusting its trimmer. This changes the output reference and is a service operation. Use the approved board procedure and a traceable meter, then recheck zero, span and the full output range.

Condition	Checks
No output / no LED	Power rating, polarity, wiring and supply at the detector
Fault indication	Sensor, cable connection and circuit condition
Unstable output	Gas exposure, contamination, power, grounding and noise
Calibration failure	Gas concentration/validity, flow, cap leaks and sensor condition

Maintenance and records

Inspect operation, gas response, cable connections, grounding, glands, enclosure joints, seals and mounting. The source recommends gas checks at intervals of up to three months and periodic inspection including calibration at least every six months. Apply the delivered manufacturer schedule and the more stringent site requirement.

Record	Entry
Location / serial number	
Gas / range / sensor	
Alarm / receiver configuration	
Gas certificate / date / result	
Next service / technician	

Replace worn seals or damaged components only with approved matching parts. Contact the manufacturer for faults affecting explosion protection. Warranty and repair terms follow the supply contract.

Technical support

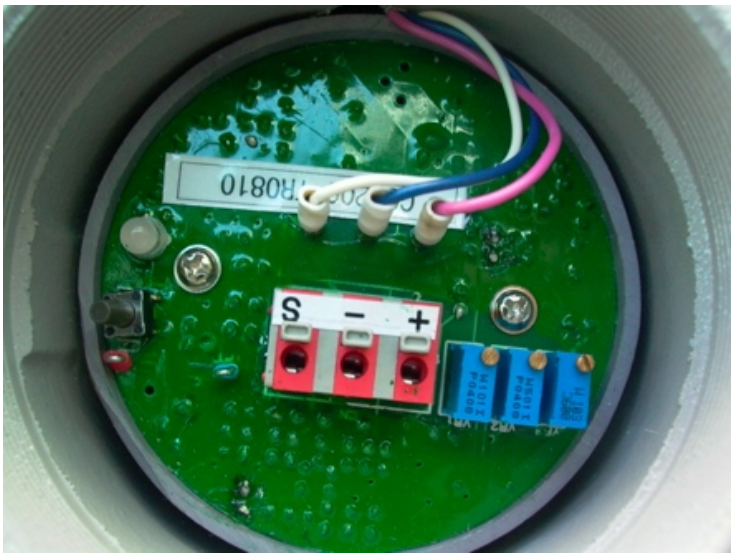
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Revision: 02 Nov 2026. Based on the company Korean and English CC-200 manuals. Terminology, calibration gas instructions and configuration distinctions have been reconciled.

Board photograph reference

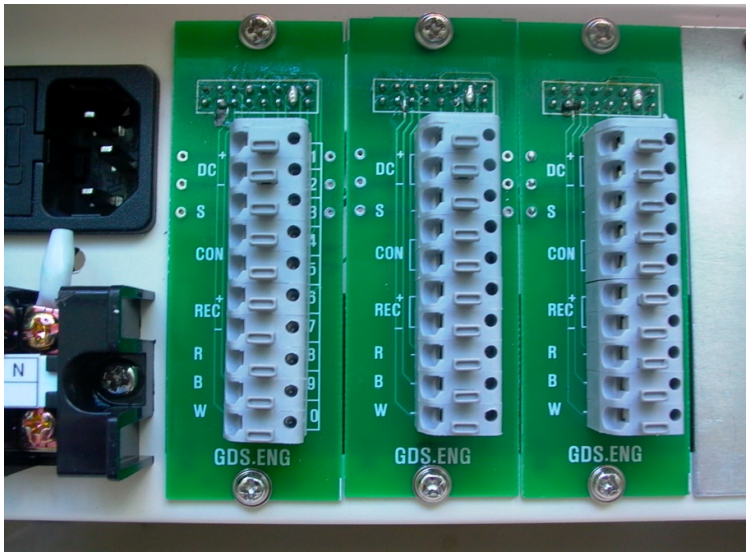
Original photographs are retained for identifying the delivered board and printed labels. Match the board version before applying a terminal number.

Detector board



Identify S, - and + on the actual board.

System board



A different board from the detector above; use the corresponding wiring drawing.