GDS ENGINEERING

2026 / TECHNICAL MANUAL

ASGD-3210F

Installation and operation instructions

Field usage instructions for HMDS 0-5,000ppm configuration



Installation / Operation / Maintenance

2026.11 Consolidated Revision · 2026.11.03

Before use, please verify the delivered model, detected gas, measurement range, and options.

gdseng.co.kr 031-731-0218

Things to check before use

This document is intended for personnel responsible for installation, operation, and maintenance. Please refer to the physical nameplate, the delivery specification, and the wiring diagram.

01 Pre-work safety measures

Installation, wiring and disassembly must be performed by trained personnel. Disconnect power before work. Inform the relevant personnel before calibration or output testing and manage interlocked equipment according to site procedures.

02 When an alarm is triggered

According to the on-site emergency procedures, identify the source of the leak and protect personnel. Do not disable the alarm or adjust the zero point to hide the actual gas concentration.

03 Post-test recovery

Remove calibration gas and test equipment. Confirm that normal detection, current output, communication and interlocked equipment have been restored. Record changed settings and inspection results.

> Do not open the cover while energized or when an explosive gas atmosphere may be present. Before installation, verify the hazardous-area classification, gas group, temperature class, ambient temperature and product certification conditions.

The menu and display examples in the manual may vary depending on the firmware. If the screen or terminal markings are different, do not arbitrarily match them; instead, verify the product number and PCB version.

For aspirating products, check the inlet and outlet, tubing for leaks or blockages, and the flow condition. Even when the pump operates, detection may be delayed if the sample gas does not reach the sensor normally.

Pre-installation check

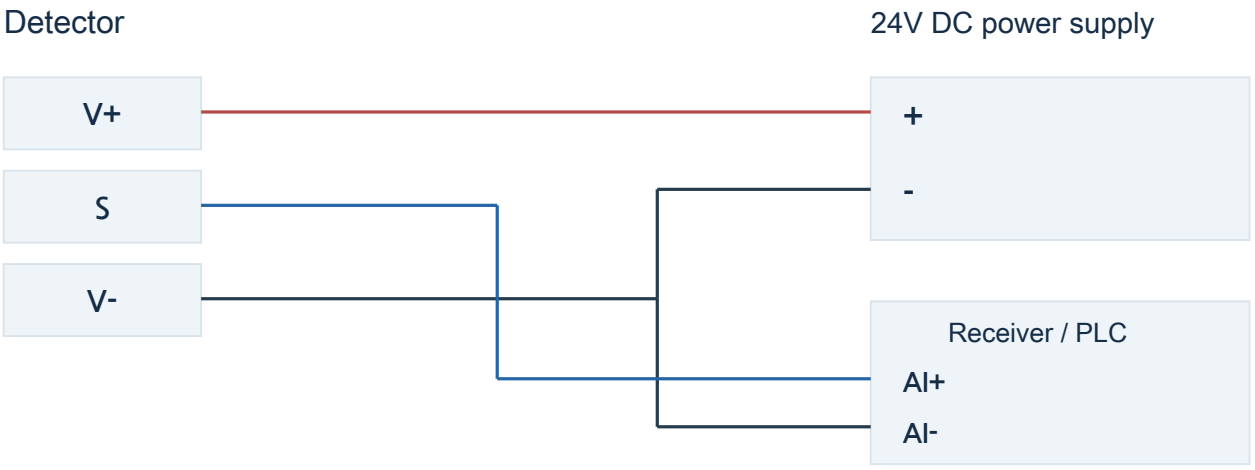
Item	Verification content
Detection method / range	HMDS / Dual channel NDIR / 0-5,000ppm
Power	DC 24V or delivered PoE configuration
Output	4-20mA, relay, and corresponding communication options
Sample piping	Outer diameter 1/4 inch tube / Normal flow rate 500mL/min
Environment	Original sensor performance conditions -20~+50°C, 5-95% RH Verify the actual certified ambient temperature and delivery conditions together.
Appearance	Specification table: 195(W) × 145(H)mm The included drawing shows a different configuration; use the delivered drawing.

Install in the power-off state. Differentiate INLET and OUTLET, and check for tube leaks or blockages. Match the wiring screws and glands to the actual nameplate and certification, and check the grounding, sealing, and cover attachment status.

> Refer to the detailed ASGD-3210F HMDS manual for wiring, assembly drawings, calibration and maintenance. The sensor's initial output time of 6 seconds differs from the system warm-up time of 180 seconds.

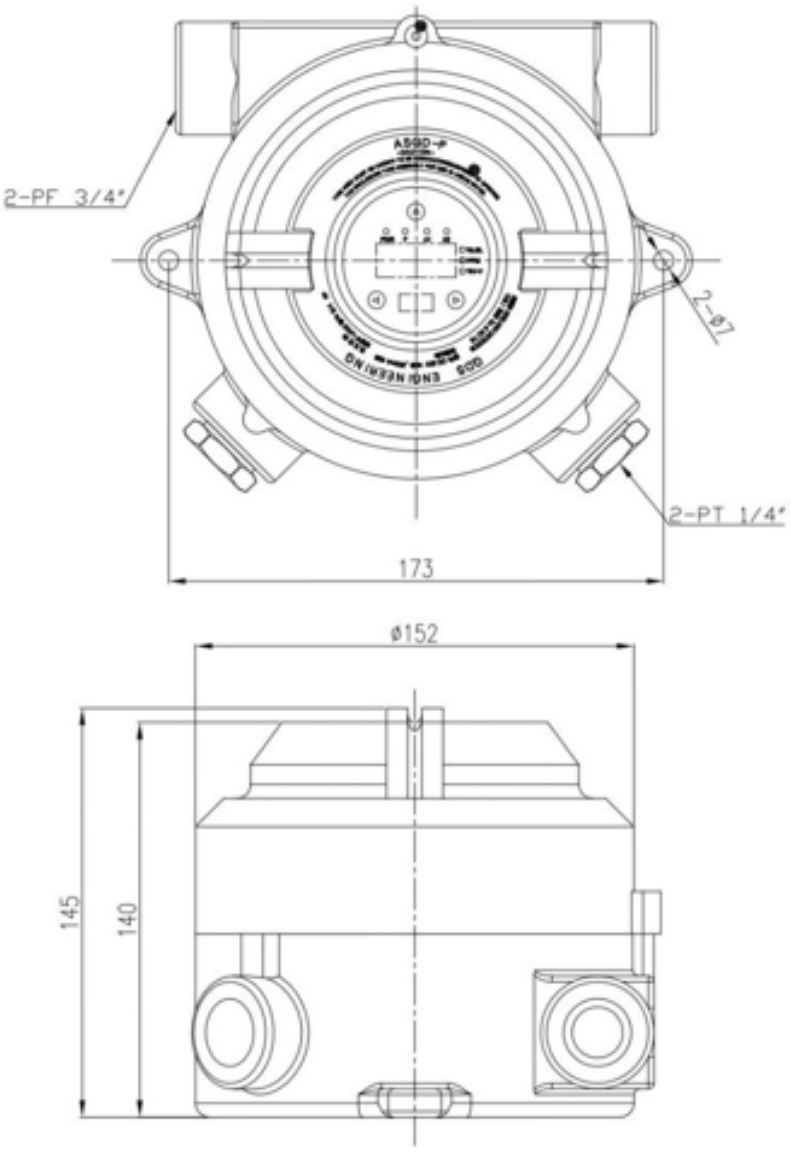
Power and signal connection

Connection	Verification
DC 24V	V+ / V- polarity and rating verification
4-20mA	Connect S signal and common wire to the receiver and isolator.
PoE	Use the designated port and power supply. Check the delivered drawing before using dual power supplies.
Relay and communication.	Configure options and verify delivery wiring, address, and protocol.



> Connect the current signal from each detector to the corresponding isolator input in a 1:1 ratio. Do not combine the signal wires of different detectors. The diagram above is a basic 3-wire example; the actual delivery wiring diagram takes precedence.

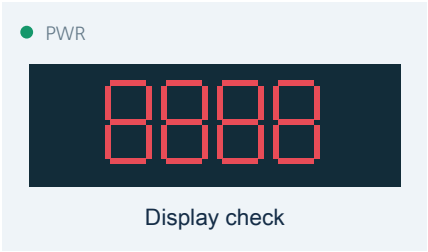
Refer to the external dimensions.



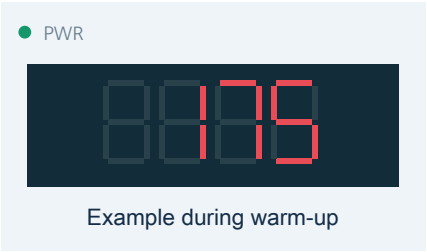
Company-held outline drawing. Units: mm. Reference configuration: 173(W), 145(H), Ø152.

> The width of 195mm in the original specification differs from the 173mm in the diagram. Do not arbitrarily estimate the range including brackets and protrusions; instead, perform installation based on the actual delivery diagram.

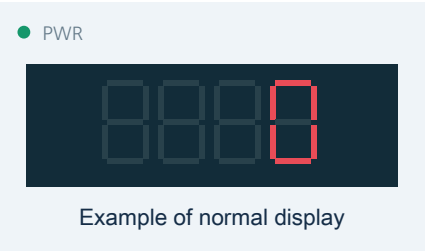
Power-up and normal operation



Display check



Example during warm-up



Example of normal display

01 Display check

When power is applied, the concentration display and status LED illuminate for approximately 3 seconds. Check the LED and numerical display and power status.

02 Warm-up for 180 seconds

The power LED turns on, and a countdown of 180 seconds begins. During warm-up, the current output is 2mA, and the alarm relay does not operate. Start operation after the product and sensor are stable.

03 Check settings

After checking the software version, address (supported configuration), measurement range, A1 and A2 settings, and relay settings, enter normal detection status. The display order may vary depending on the firmware.

Self-check

When the ENT button is pressed three times in the normal state, the SELF indicator appears, and the display and status LED illuminate for approximately 1 second. At this time, the output is 2mA, and the relay does not operate.

> A warm-up skip button, where supported, does not replace sensor stabilization. Normal concentration depends on the target gas; the normal ambient reading of an oxygen detector is not 0.

Basic operation and calibration.

Operation / Menu	Function
LEFT, ENT, RIGHT	Enter setting mode.
LEFT / RIGHT	Navigate and adjust settings.
0000	Calibrate to the specified zero point.
SPAn / SPRn	Calibrate sensitivity using the standard gas.
4-20	Test 4mA~20mA output.
A1 / A2	Check and set approved stage 1 and stage 2 alarm values
OUT + ENT	Return to normal detection.

To set SPAN, supply the standard gas for at least 60 seconds and allow it to stabilize, then enter the concentration from the certificate, and save in the order ENT, YES, ENT. If calibration fails, first check the gas, pipe, flow rate, and sensor.

> The rES reset may change calibration, alarm, range and output settings. Do not use it simply to clear a fault. Time, log and network menus apply only to firmware that supports them.

Operation check and technical support.

Output current	Status / Check items
0mA	Check for detector failure or power/wiring problems
1mA	Sensor failure signal: Supported in the corresponding firmware
2mA	Warm-up or function setting/check status
4-20mA	Normal measurement signal: Proportional to the set measurement range
22mA	Overrange or protection status: Prioritize checking for gas leakage

Check PWR, F, A1, A2, unit indicators and FLOW. Follow site emergency procedures for overrange or alarms. After warm-up, calibration or output testing, confirm normal detection and restoration of interlocks.

Check record: Model, product number, gas, range, unit, firmware, A1/A2, calibration gas, test result, next check date. Contact the manufacturer for damage to explosion-proof joints and seals.

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