

Refrigerant Gas Detector

for A3 and A2L Refrigerants
with Relay and Modbus Output

GD-5000



Nissha FIS5000 series inside

The **GD-5000** is a reliable gas detector that integrates a Nissha FiS **FIS5000 series** module and on-board electronics, offering a complete and compact solution for monitoring refrigerant gases based on the high quality/price ratio MOS Technology.

Designed for safety and control applications in industrial and civil environments, the **GD-5000** provides intelligent diagnostics and flexible communication via **Modbus RTU and via relay**.

It guarantees secure operation for 10 years without calibration and ensures simplified integration.

Features & Benefits

- **Smart Diagnostics:** Determines the sensor's operational status and its "remaining life".
- **Operational Reliability:** Includes a relay self-test on startup, a watchdog, and self-diagnosis loops for fail-safe operation.
- **Standard Communication:** Modbus RTU RS485 interface for seamless integration with PLCs and HMIs.

- **Fail-Safe Alarm:** The alarm relay activates in case of a gas threshold being exceeded, sensor malfunction, end-of-life status, or a persistent signal error.
- **Visual Diagnostics:** Three dynamic LEDs (Green, Yellow, Red) provide intuitive and immediate feedback on the status of the device and sensor.
- **Minimal Maintenance:** Requires no routine maintenance.
- **Flexible Configuration:** Operating parameters are configurable and readable via Modbus, with settings saved in EEPROM.

Applications

- HVAC systems
- Refrigeration units
- Safety and alarm systems
- Industrial automation and remote supervision

Why choose the GD-5000 detectors?

- **Mandatory Safety Compliance:** In systems using A2L (mildly flammable) and A3 (flammable) class of refrigerants, leak detection modules are required by safety regulations.
- **Environmental Responsibility:** Fluorocarbon refrigerants are potent greenhouse gases. Early leak detection helps reduce emissions and supports sustainability efforts.
- **Long-lasting & Easy to Install:** Designed for extended use in commercial and industrial environments, the detector is both cost-effective and user-friendly.
- **High Sensitivity and Reliability:** Ensures consistent detection performance under real-world operating conditions.
- **Excellent value for money** – ideal for cost-sensitive projects.

Refrigerant Target Gas

■ R290 ■ R600 ■ R600A ■ R601 ■ R32 ■ R454A ■ R454B ■ R454C ■ R455A ■ R1234yf

LED Visual Diagnostic

GREEN and RED LEDs provide immediate visual feedback on sensor status and alarm triggering.

Technical Features

Parameters	Description
Available Models	GD-5002 : A2L (R32, R454A(B/C), R455A, R1234yf) GD-5003 : A3 (R290, R600, R600A, R601)
Power Supply	12/24V DC
Power Consumption	< 100mA
Operating Temperature	-40 to +60°C
Relative Humidity	0-95% (non-condensing)
Relay Output	Dry contact (NC, NO), max. load 30V/1A
Modbus Output	RS485, Modbus RTU protocol
Modbus Baud Rate	19200 bps
Modbus Parity	None (8N1)
Modbus Address	Configurable (default: 1)
LED Indicators	Green: Status Red 1: Gas Alarm Red 2: Sensor Fault
Wiring	Screw terminals (max 2.5 mm ²)
IP Rating	IP65
Mounting	Wall Mount
Dimensions	80 x 80 x 50 mm
Certifications	CE – EMC