

Remote Sensors (MWG) for Carbon Dioxide (CO₂)

MWG 2490 IR



MWG with Infrared (NDIR) Sensor

One-man Calibration Onsite

Output 0.2–1 mA or 4–20 mA

Worldwide Supplier of Gas Detection Solutions



GfG Instrumentation

Remote Sensor with NDIR Sensor for Carbon Dioxide (CO₂)



CO₂—A Toxic Hazard

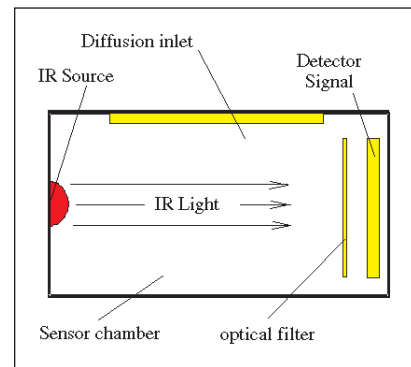
Carbon dioxide (CO₂) is often used as a work medium, or is stored, shipped or generated as a by-product of certain industrial applications. The specific characteristics of CO₂ make this gas a hidden danger.

Carbon dioxide is odorless, tasteless and undetectable to human senses. CO₂ is considerably heavier than air and can rapidly build to dangerous concentrations in holes, sewers or cellars. Concentrations as low as 4 percent volume can be toxic, and 8 percent volume CO₂ can cause death. Carbon dioxide also displaces the oxygen content in the ambient air, which may lead to asphyxiation.

GfG Instrumentation's fixed gas warning systems allow continuous monitoring of gas hazards to ensure that counter-measures can be taken in time. A fixed gas monitoring system consists of a remote sensor which is connected by a cable to a controller such as the GMA 011, GMA 100, or GMA 300. The controller powers the remote sensor and evaluates its measurement signals.

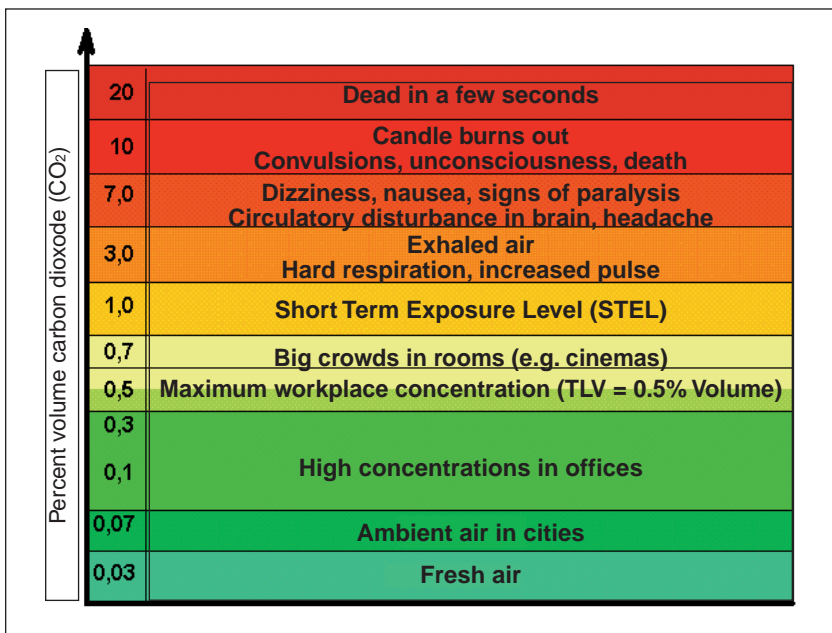
MWG 2490 IR for CO₂

The remote sensor with its sensor cell is mainly responsible for the reliability of a gas monitoring system. The sensor is installed wherever CO₂ may be present. Even the lowest gas concentrations can be detected and transmitted to a central control station as current or voltage signals which are proportional to the actual gas concentration.



MWG 2490 IR Detection Principle: Infrared Light

Since carbon dioxide (CO₂) absorbs light in the infrared spectral range, the NDIR method used in the GfG sensor can measure the carbon dioxide concentration precisely and reliably. Infrared light is sent through the sensor chamber. Carbon dioxide absorbs a part of this light in a narrow spectral range, and the remaining light is measured at the detector. The difference between the light sent and received is proportional to the gas concentration. Water vapor or other gases that can be present in the sensor chamber do not affect the light absorption in this spectrum band.

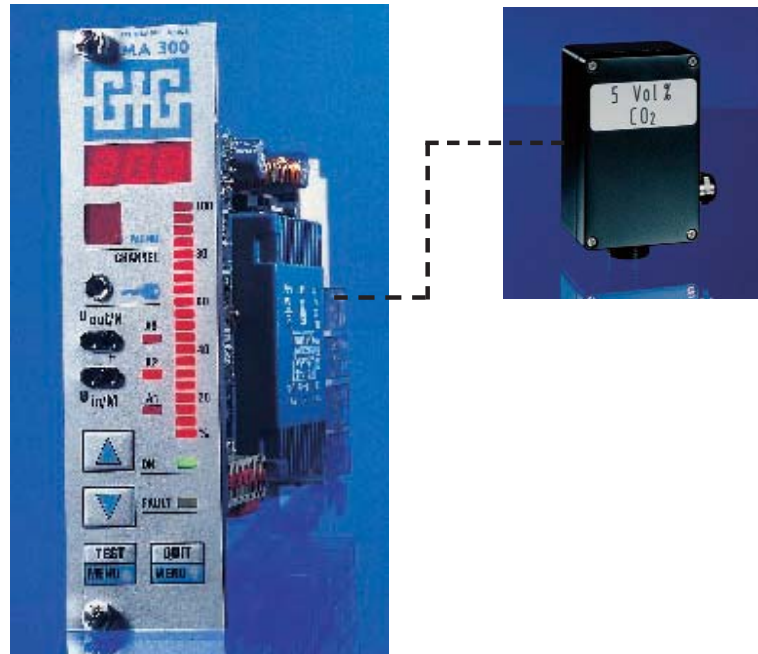
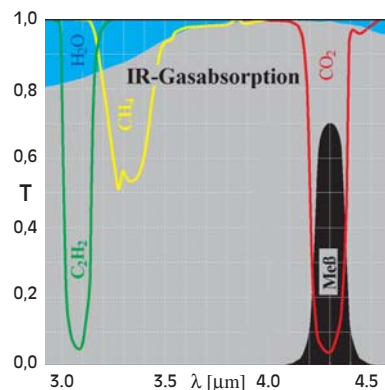


Safe Measurement Results

Measurements using the precision of light allow high reliability and repeatability. The IR principle is as unambiguous as a fingerprint in criminology. Only carbon dioxide influences the measurement. This prevents false alarms by other gas components. GfG Instrumentation remote sensors include an electronic circuit for voltage stabilization of the output signal and temperature compensation. This ensures stable measurements over wide temperature ranges.

Durable Construction for Long Lifetime

The MWG 2490 IR does not contain any moving parts that are subject to wear and tear, ensuring a long lifetime and low maintenance costs. More safety is provided by the permanent self-check and function test of the GMA controller. Sensor and electronics are protected in a solid enclosure from dust and water according to IP 54. This ensures that water cannot enter the detector, even in wet environments.



Easy Handling

Behind a service lid on the front of the MWG 2490 IR are potentiometers and test connectors for easy adjustment of zero point and detection range. This allows one-man calibration on-site and reduces service down-time.

Quality Control Adds More Safety

All remote sensors are made by GfG Instrumentation and have to pass a 100% quality and function test. All sensors are shipped pre-calibrated. An authorized GfG Instrumentation specialist makes the final adjustments during system installation.

MWG 2490 IR Features

- Selective NDIR detection principle
- Extended sensor life for long-term economy
- Easy handling
- Signal output either 0.2–1 mA or 4–20 mA
- Potentiometers for easy adjustment of zero point and detection range
- Connectors for test of output signal
- Solid aluminum casing, IP 54
- High reliability and repeatability of measurement results
- Wide detection range

Technical Data

Remote Sensor (MWG) 2490 IR

Gas

Carbon dioxide (CO₂)

Range

0 to 5% Volume
(other ranges on request)

Detection Principle

NDIR, single beam system, temperature compensated

Gas Supply

Diffusion

Response Time

TAlarm < 25 seconds

Expected Sensor Life

5 years

Humidity

0 to 99% r.h., non-condensing

Pressure

920 to 1100 hPa

Ambient Temperature

+4 to 104 °F (-20 to +40 °C)

Casing Protection

IP 54

Cable

3-wire transmitter, cable gland: PG 9, threaded

Output Signal

0.2 to 1 mA or 4 to 20 mA

Power Supply

18 to 26 V, 100 mA
Supply by e.g. GfG Instrumentation
GMA controllers

Dimensions

0.4 x 5.7 x 3.1 inches (WxHxD)
(10 x 145 x 80 mm)

Weight

31.5 oz (900 g)

Ordering Information

2491001 MWG 2491
2492001 MWG 2492

Accessories

Sensor cable
Protective casing
Sampling system

Thermostat Control

An electronic thermal circuitry ensures a constant temperature at the sensor. This ensures high measurement accuracy even if the ambient temperature changes, and prevents condensation on the optical components.

We reserve the right to change specifications without notice.

GfG Instrumentation equipment is manufactured according to the latest standards of environmental protection. Both GfG Instrumentation and our suppliers adhere strictly to the regulations for the disposal of hazardous materials.

Distributed by:



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