Controller GMA200-MW

High-performance gas warning system for various requirements to measure gas hazards

- Freely programmable connection of detectors for measuring combustible and toxic gases/vapours and oxygen
- Freely programmable relays
- Flexible, reliable and economic
- Clearly structured, backlit LCD graphical display with traffic light function
- Wall-mounting housing, IP 65
- Connection of other measuring devices/transducers with 4-20 mA output signal possible

Technology for people and the environment

Decisive safety advantage

Transmitter for combustible gases and vapours

Transmitter for toxic gases/vapours and oxygen

GMA200-MW
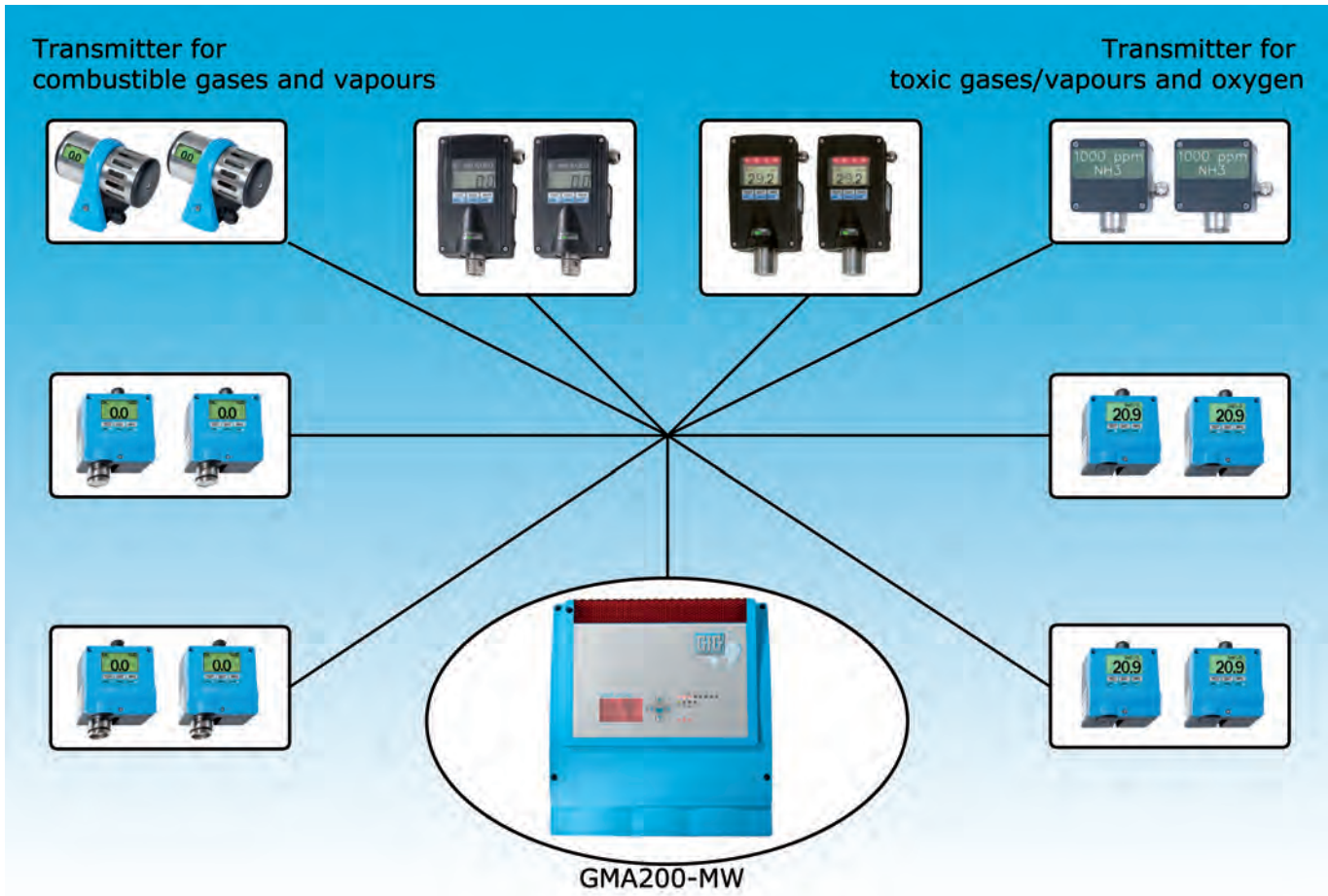
GfG

For more than 50 years, the key goal of GfG has been to meet the highest demands of occupational health and safety, industrial equipment reliability and environmental protection by developing innovative and reliable gas warning systems.

The development of the new gas warning system GMA200 satisfies these requirements while taking into account suitability testing in line with ATEX Directive 94/9/EC, if switching functions for explosion protection are intended via the gas warning system. It also meets the requirements on gas warning systems without necessary ATEX certification and functional safety requirements (SIL).

Design of the GMA200-MW gas warning system

The design and configuration of the GMA200-MW gas warning system ensures flexible, simple and clearly structured operation in industrial and commercial applications for measuring combustible and toxic gases/vapours, and for measuring oxygen concentrations.

The compact design of the GMA200-MW gas warning system can be wall mounted and thus permits a flexible installation.

Modular design of the GMA200-MW gas warning system:

Up to 16 detectors can be connected to the GMA200-MW gas warning system. A software program enables the quick and easy configuration of the measuring points even for already installed GMA200-MW gas warning systems. Measuring point designations, the detector type, the type of gas and measuring range as well as three individual or specified alarm thresholds can be programmed for each measuring point using the configuration software.

A microprocessor evaluates the analogue input signals of the connected detectors.

Integrated relays

In view of the increasing requirements being placed on safety measures up to redundant protection against gas hazards, complex gas warning systems are in demand.

The GMA200 gas warning system is equipped with 8 internal relays. 6 relays can be freely configured using the software program in order to implement safety measures and alarms. The configuration software offers numerous and flexible options, e.g., the assignment of one or several measuring points to relays, single alarms per measuring point and alarm threshold, configuration of collective or group alarms, fault messages and voting functions. An additional relay is available for each controller as a safety-related fault message and maintenance relay.

Relay modules

Using a relay module GMA RT, the GMA200-MW gas warning system can be extended by 16 further

Universal: Various detectors can be connected and evaluated

freely configurable relays. A total of 4 additional relay modules each with 16 relays can be managed via the GMA200-MW gas warning system. Digital connection of the GMA RT relay module to the GMA200-MW gas warning system enables decentralised installation of the relay modules.

The local and thus flexible installation of the relay modules results in large cost savings due to the reduced cabling and assembly tasks.

Availability of the GMA200-MW gas warning system

Besides the traditional voltage supply, the GMA200-MW gas warning system can also be operated with a redundant, safety-related voltage supply and therefore meets the highest demands of functional safety and the required permanent availability of gas warning systems for detecting potential gas hazards.

System functions:
LED displays

The status of the GMA200-MW gas warning system - operation, fault, service - is shown via LEDs.

Graphic display

The clearly structured layout of the GMA200-MW gas warning system enables the quick detection of hazardous situations. Currently measured values are permanently displayed on the LCD graphic display. In the event of gas alarms, the display lighting is automatically activated with a red background.

The LEDs also signal Alarm 1, Alarm 2 and Alarm 3.

In the event of an alarm, the status of the active relays 1-8 is displayed simultaneously via LEDs.

The integrated memory enables the reading out of the alarm levels and of minimum/maximum values per measuring point at the LCD display for an initial, quick hazard assessment.

Data logger function

The GMA200-MW gas warning system can be equipped with a microSD memory card for saving the measured values. The measured values, mean values, alarm events and faults are permanently stored at individually configurable intervals, and can be read out for evaluation.

Operation via keyboard
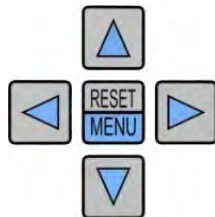
Five buttons enable operation at the GMA200-MW gas warning system. The main functions of the keyboard are the acknowledgement of alarms and the menu-driven operation of the GMA200-MW. Information on the status of the gas warning system, detector and the relays can be retrieved in the operating menu.

Configuration

A USB port on the GMA200-MW gas warning system can be used for connection to the configuration software.

GMA200 as a wall-mounted housing

GMA200-MW Configuration Software

Additional wall-mounting housing GMA200-MW

A USB port on the gas warning system GMA200 can be used for connection to the configuration software.

For installation of:
- External relay module GMA200-RT
- Independent power supply GMA200-UPS
- Suction unit GMA200-ASV

Technical data

GMA200-MW

Measuring gases:
combustible and toxic gases and vapours, oxygen, for all GfG transmitters

GMA200-MW wall mounting (dimensions):
approx. 270 x 290 x 98 mm (WxHxD)

Display and control elements:
backlit LCD graphic display
33 x 53 mm with 132 x 65 pixels
5 buttons (left, right, up, down, OK)
8 LEDs: 4x red, 1x green, 3x yellow

Connection options:
GMA200–MW Gas Warning System:
up to 16 analogue detectors

Inputs:
16 analogue inputs 4...20mA or 0.2-1mA
max. 50 Ohm input resistance

2 digital inputs:
Acknowledgement of alarms, can be freely configured

2x RS485 BUS, e.g., for the connection of external relay modules or digital transmitters in BUS wiring

1x RS485 bus for digital transfer of measured and output data to a higher-level control centre or with master functionality of a GMA200 for the connection of relay modules GMA200-RT

Outputs:
6 relays (changeover contacts), freely configurable for single alarms per measuring point and alarm threshold, configuration of collective or group alarms, fault messages and voting functions

1 relay for maintenance and 1 for fault messages (closed-circuit principle)
2 analogue outputs:
4-20 mA / 600 Ohm max. resistance, freely configurable

External relay module:
up to 64 additional freely configurable relays (thanks to additional relay modules each with 16 relays), can be configured for single alarms per measuring point and alarm threshold, configuration of collective or group alarms, fault messages and voting functions

Alarms:
3 independent threshold alarms per measuring point for Alarm1, Alarm2 and Alarm 3, can be freely set in the measuring range

Alarm functions:
exceeding, not achieved, acknowledgeable (additional horn only), non-acknowledgeable non-self-locking / self-locking

Data storage:
Measured values can be stored on an SD card for the permanent data recording of measured values, alarms and faults

Intervals can be set (5 sec.-60 min.), recording of instantaneous and mean values, minimum/maximum concentration can be selected per measuring channel

Ambient temperature:
Operation: -20 °C .. + 50 °C
Storage: -30 °C .. + 60 °C

Power supply:
2 x 24 V DC, 20-30 V
(1 x redundant voltage supply)

Power consumption:
Gas warning system GMA 200–MW16:
90 W incl. connected detectors

Relay module GMA-200 RT: 6 W

Protection classes/Approvals:
Housing:
IP65

ATEX approval

⟨Ex⟩
Applied for in accordance with ATEX 94/9/EC

Electrical safety:

EN 61010:2010
Degree of soiling 2
Surge voltage category III
for relay contacts

Electromagnetic compatibility

EN 50270:2006
Emitted interference type class I
Interference resistance type class II

Metrological suitability testing:
Applied for according to DIN-EN 60079-29-1

www.gasmessung.de
info@gfg-mbh.com