GMA 200-MW4 Controller

High-performance gas measurement and warning system

- Advanced and flexible controller for combustible, O_2 and toxic gas

- IP-65 wall-mounting housing, with integral audible and LED alarms

- Flexible, reliable and economic

- Up to 4 transmitters per GMA 200-MW4 controller...*in any combination*

- Freely programmable relays

- Clearly structured, easy-to-use push-button interface

- Backlit graphic LCD changes color to indicate alarm

- Connect to other measurement devices with 4-20 mA output

- Modbus (RS485) output

- SIL certified

GfG Instrumentation

Technology for people and the environment

Decisive safety advantage

GfG Instrumentation

GfG Instrumentation is a global leader in the design and manufacture of gas detection products used to protect people, facilities and the environment. For over 50 years we have provided gas detection solutions for life critical health and safety applications. Our innovative and reliable gas warning and measurement systems provide the industry benchmark for accuracy, dependability, and cost-effective ownership.

GMA 200 Gas detection system

The GMA 200 offers innovative technology and trend-setting flexibility. It is designed for commercial and industrial applications for the measurement of combustible and toxic gases as well as for the measurement of oxygen. The compact construction of the GMA 200-MW4 provides a cost-efficient solution for safe gas monitoring of small facilities.

Parallel measurement and flexible application

With the GMA 200-MW4 up to four different transmitters can be monitored simultaneously. They can be connected analog or digital to the GMA 200-MW4. Using the configuration software for every connected single transmitter the measurement range, the measurement designation, the type of transmitter and the type of gas can be set individually and three alarm thresholds can be programmed. The microprocessor of the GMA 200-MW4 evaluates all receiving signals and activates alarm or relays. In doing so one single GMA 200-MW4 can master different gas detection tasks.

Integrated relays

GMA 200-MW systems include comprehensive and fully programmable relays. Each GMA 200-MW4 controller is equipped with six internal relays. For the implementation of safety measures and alarm, four relays can be freely programmed so that in case of alarm the safety measures can be triggered automatically.

The programming grants wide-ranged and flexible possibilities such as the allocation of one or more measurement points to relay, single alarm per measurement point, configuration of collective alarm and group alarm, error report and voting function. For each, safety related error report and and maintenance, there is one additional relay available.

Relay modules

The GMA 200-RT relay module can be added and adds an additional 16 freely configurable relays. A total of four additional relay modules (for 64 additional relays) can be managed by the same GMA 200-MW4. Digital interface (RS485) with the GMA 200-RT relay module allows decentralized installation of the relay modules, which offers great flexibility and reduces cabling and installation costs.

GMA 200-MW4 Controller

In addition to the traditional power supply the GMA 200-MW4 can be operated with a redundant, safety-oriented power supply. Based on this the GMA 200-MW4 meets the highest safety requirements and guaranties a permanent availability of gas detection systems for potential gas hazards.

System functions:

LED indicator lights

LEDs show the Status of the GMA 200-MW4 controller (including operation, fault, service alarm and relay status).
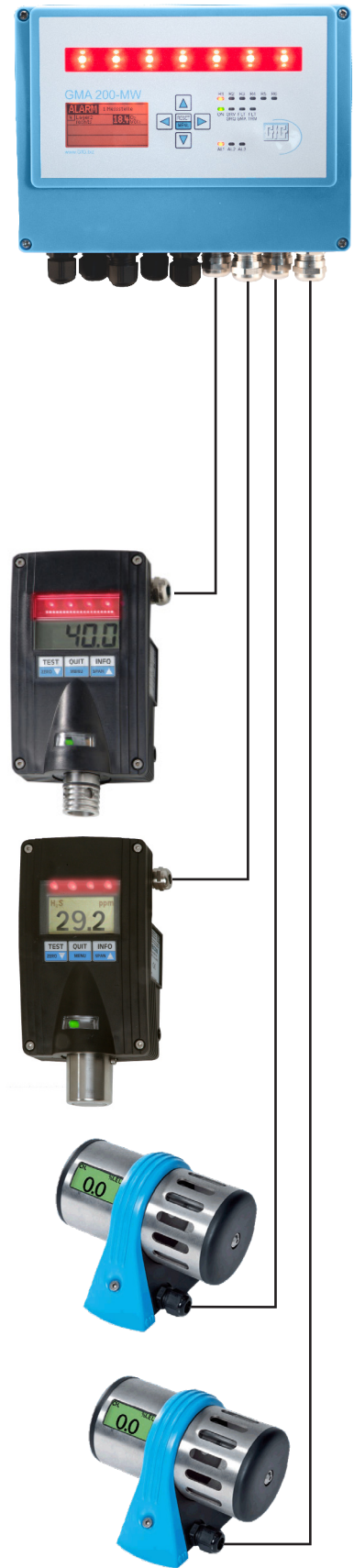
Universal: Use to connect and evaluate various detectors

Graphical display

Currently measured values are displayed on a backlit, graphical LCD. In the event of an alarm the display changes color from green to red, and highlights the affected channels. Furthermore the display of alarm 1, alarm 2 and alarm 3 occurs on the LED graphic display. Simultaneously the status of the affected channels 1-8 is shown by the LED lamps in the case of alarm.

The integrated storage allows the reading of alarm stages.

Datalogging standard

Measured values, mean values, alarm events and faults are permanently stored on a microSD memory card.

Operation via keypad

Operation of the GMA 200-MW4 is through easy-to-use menus, and a simple five button interface. Main functions of the keypad are the alarm acknowledgement, and viewing information on the status of the controller, the transmitter and the relays through the operation menu.

Configuration

A built-in USB port in the GMA 200-MW4 is used for connection to the configuration software.

GMA 200 bus interfaces (RS485)

There are three RS485 interfaces on the GMA 200-MW systems.

2 x TRM – BUS

The TRM-BUS allows the connection of up to 16 digital Transmitters. They can be connected in loop structure or line structure to the GMA 200, so that there is a wide range of possible connections. In addition, every TRM – BUS offers integration of the external relay module GMA 200-RT / RTD.

1 x GMA – BUS

In addition to the option to use this BUS for the connection of an external relay module, this interface also offers the option to integrate the GMA 200 controller into a network of facilities. A Modbus protocol in the RTU – Mode, which is transmitted through the GMA –

BUS interface allows status readings of the GMA 200 controller by using a PC. Additional gateways are offered by GfG and enable the digital status monitoring and data processing using additional external modules (e.g. PLC).

GMA 200 Visualization

Complex Gas Detection Systems with several controllers and numerous different transmitters call for a clear overview to guarantee safety. The rapid and precise localization of gas hazards is critical to protect facilities, environment and human life. The PC – based Visualization Software, GMA 200 clearly displays the status of the entire Gas Detection System. If any alarm threshold is exceeded, the alarm triggers a measuring station with associated designation, the measured value, the measured unit (% vol. or % LEL) and the type of gas is displayed immediately on the screen, so that appropriate measures can be taken quickly.

Technical data

GMA 200-MW4

Gases and sensors:
GfG transmitters for combustible, oxygen and toxic gases and vapors

GMA 200-MW wall mounting (dimensions):
Approx. 8.23 x 7 x 2.52 in /
209 x 180 x 64 mm (WxHxD)

Display and control elements:
Backlit LCD graphical display 1.3 x 2 in
(33 x 53 mm with 132 x 65 pixels)

5 buttons (left, right, up, down, OK)

LED indicators: 8 status and alarm
(4x red, 1x green, 3x yellow); 6 relay
(6x red)

Connection options:
Gas warning system GMA 200–MW4:
Up to 4 analog or digital detectors

Inputs:
4 analog inputs (4-20 mA or
0.2-1 mA); max. 50 Ohm input
resistance

2 digital inputs: Acknowledgement of
alarms can be freely configured

2x RS485 BUS (for 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 center or with master
functionality of a GMA 200-MW for
the connection of GMA 200-RT relay
modules)

Outputs:
Modbus (RS485)

4 relays (normally open contact), 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 analog outputs: 4-20mA / 600 Ohm
max. resistance, freely configurable

Alarms:
3 independent threshold alarms per
measuring point (AL1, AL2, AL3)

Gas alarms can be freely set in the
measuring range

Alarm activation logic:
Ascending, descending, exceeding, not
achieved acknowledgeable (additional
horn only), non-acknowledgeable
non-self-locking / self-locking

Data storage:
Measured values stored on 2 GB
microSD card

Intervals can be set (5 sec.-60 min.)

Records instantaneous and mean
values, minimum/maximum
concentration

Logger settings individually
programmable per measuring channel

Ambient temperature:
Operation: -4 °F to +125 °F /
-20 °C to +50 ºC
Storage: -22 °F to +140 °F /
-30 °C to +60 °C

External relay module:
16 relays per module; up to 4 relay
modules per GMA 200-MW4 system
(for up to 64 additional relays); freely
configurable for single alarms per
measuring point and alarm threshold,
configuration of collective or group
alarms, fault messages and voting
functions

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

Power consumption:
GMA 200–MW4 Controller:
30 W (incl. connected detectors)

Relay module GMA 200 RT: 6 W

Protection classes/Approvals:
Housing:
IP 65

ATEX approval
Applied for in accordance with
ATEX 94/9/EC

Electromagnetic compatibility:
EN 50270:2015
(interference emission: type class I,
interference immunity: type class II)

Electrical safety:
EN 61010-1:2010
(Pollution degree 2, overvoltage
category III for relay contacts)

Functional safety:
EN 50402:2017; IEC 61508-1 to
-7:2010 (SIL2/SC3)
EN 50271:2018; EN 62061:2016; ISO
13849-1:2015

Metrological suitability:
EN 60079-29-1:2016 (EX); EN
50104:2010 (OX); EN 45544-1/-2/-
3:2015 (TOX)

Specifications subject to change without notification