

GMA200-MW16 Controller

High performance control of up to 16 transmitters





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GMA200 Gas detection system

The GMA200 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 GMA200-MW16 controller is ideally suited for complex gas detection systems with up to 16 digital or analog transmitters. Safety components can be connected directly to the GMA200-MW16 using internal relays. The display will indicate the current measured values as well as any alarms or special states of the transmitters.

Versatile application possibilities

The GMA200-MW16 controller and the connected transmitters form a fixed gas detection system for measuring toxic and flammable gases as well as oxygen concentration. Up to 16 digital transmitters can communicate with the controller via the RS-485 interface. Analog transmitters (up to 16) can be connected via 0.2-1 mA or 4-20 mA. The GMA200-MW16 is suitable for any GfG transmitter and any available gas type. This offers a large number of possible combinations of gases, measuring ranges, measuring points and Ex zones to be monitored simultaneously. The robust housing (IP65) for wall mounting can be installed in almost any location. The supply voltage is 100-230 V AC or 24 V DC.

Integrated relays

Six internal relays with one normally open contact each can be programmed individually to implement safety measures. Two additional relays are available for fault messages and maintenance. If your area of application requires it, the number of programmable relays can be increased to up to 70 (6 internal and 64 external relays). The relay modules are connected through the GMA bus interface. GfG's GMA200-RT and GMA200-RTD relay modules allow safety measures to be implemented in a decentralized manner, reducing the amount of cabling required.

Remote terminal displays

Relay modules are available with or without an integral display for readings and system information, making it easy to add a remote terminal wherever needed.



GMA200-MW16 Controller in IP65 wall-mounted housing.

Graphical display and LED lights indicate hazardous situations

The GMA200-MW16 has a color backlit 2.2 inch display on which the current measured values of the connected transmitters are indicated at any time. In the event of an alarm, the background color changes from green to red. At the same time, LEDs indicate the alarm level and the relay switching states. A local alarm is triggered by an easily visible alarm light and a loud, integrated buzzer (100 dB). Two input slots are available for external alarm acknowledgement push buttons.

« Reliable Controller for Complex Systems. »

Data logger

For long-term storage and documentation of the measured values, the GMA200-MW16 can be equipped with a microSD memory card. Measured values, average values, alarm events and faults are stored at individually configurable intervals and are available for evaluation.

Operation, visualization and data storage

The controller is operated by five push buttons and the alarm is intuitively acknowledged the same way. The device can be configured via the mini-USB interface using a PC and the GMAConfig software. With the optional GMA200-VS software, all measured values and states of the connected transmitters can also be displayed decentrally on a PC or monitor. Equipped with a microSD card, the controller permanently stores measured values, average values, alarm events and faults at individually configurable intervals for evaluation.

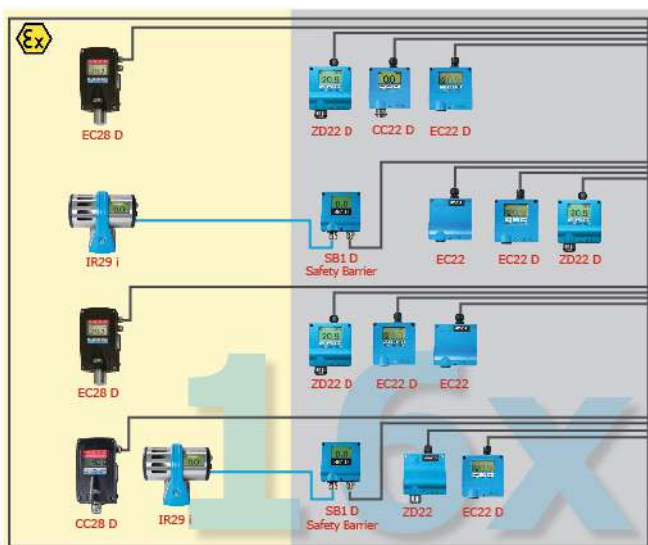
GMA200 power options

GMA200-MW16 power options include traditional voltage inputs (2 x 24 V DC, 20-30 V), as well as operation via a redundant, uninterruptible power supply (UPS), ensuring continued operation of the gas warning system even during a power outage.



Easy configuration

Easy-to-use, menu driven GMA200-MW16 software allows configuration of sensor type, gas type, measuring point designations, units of measurement, calibration curves, and function of the comprehensive and fully programmable relays. Up to three individual or specified alarm thresholds can be programmed for each measuring point. The GMA 200-MW16 continuously evaluates the analog input signals of the connected transmitters.





Controller
GMA200-MW16

- Gas Detection Controller in wall mounting housing
- Connection of up to 16 different Transmitter possible
- 8 free programmable Relays (changeover*)
- Power Supply of the Transmitter by GMA200-MW16
- Optional redundant power supply
- Optional uninterruptible power supply (approx.. 20 min at max. 1,8 A)
- Optional Datalogger

Power of the GMA200-MW16 Controller system.

Optional Fieldbus Gateways

Optional gateway modules allow integration of the GMA200-MW16 system into existing company networks based on TCP/IP, Process Field Bus or Process Field Network protocols. Monitoring and system performance data can be exported for viewing or analysis.

Technical Data: GMA200-MW16

Displays and controls:	Status LEDs: 13 status LEDs for alarms, operating and relay states Display: 2.2 inch graphic display with 132 x 65 pixels Pushbuttons: 5 function keys Alarm: Horn max. 100 dB(A) adjustable
Power supply:	Operating voltage: 100-240 V AC 50-60 Hz mains voltage and/or 24 V DC (20-30 V DC) through stabilized SELV or PELV power supply unit Power consumption: Max. 16 VA (without transmitters) Max. 42 VA (with transmitters) Fuses: F1: T 500 mA changeable (for GMA200) F2: M 1 (for transmitters)
Transmitter connections:	Supply output U_{out} : 24 V DC $\pm 3\%$ supplied by the internal power supply unit, otherwise 20-30 V DC (see above) 4x 150 mA or $I_{ges}=0.6$ A with different allocation Analog signal input I_{in} : 4-20 mA or 0.2-1 mA Measuring tolerance: $\pm 0.3\%$ MR @ 4-20 mA or $\pm 1.2\%$ MR @ 0.2-1 mA (MR = measuring range) Digital signals TRM bus 1+2: (Load approx. 50 to 100 Ω , $I_{max} = 70$ mA continuous / 500 mA short-time) RS-485; half-duplex; max. 38,400 baud
Measurement value processing:	Update time: 1s (If there are more than 16 transmitters and relay modules on the same TRM bus and the data transmission is only at 9600 baud, the cycle time is extended from 1.0 to max. 1.3 s, so that the time of 1 s cannot be maintained) Adjustment time for RS485: Rise time $t_{50}<2s$ or $t_{90}<2sec$ Decay time $t_{50}<2s$ or $t_{10}<2sec$ for 4-20 mA: Rise time $t_{50}<2s$ or $t_{90}<4sec$ Decay time $t_{50}<2s$ or $t_{10}<4sec$ for 0.2-1 mA: Rise time $t_{50}<6s$ or $t_{90}<10sec$ Decay time $t_{50}<6s$ or $t_{10}<10sec$ (extended by setting times of the gas measuring transmitters) Ready delay: <40s (can be extended by running-in times of gas measuring transmitters)
RS-485 outputs:	GMA bus: RS-485; half-duplex; max. 230,400 baud (for GMA200 relay modules, control center, PC, PLC or gateway) RS485 bus: RS-485; half-duplex; max. 38,400 baud (only for GMA200 relay modules)
Relay outputs	Contacts: 6 relays with normally open contact Insulation distances: Basic insulation between the relays: 1&2, 3&4, 5&6 Double insulation between the relays: 2&3, 4&5 3 A/250 V AC or 3A/30 V DC Contact load capacity: 10 mA Minimum switching current: 5 V Minimum switching voltage: 5 V Switching frequency: Max. 100 per year (per relay contact), valid for SIL applications according to EN 50402
Analog outputs:	I_{out} 1+2: 4-20 mA with linear transfer function (load max. 560 Ω) Accuracy: $\pm 0.3\%$ MR @ 10 to 30 $^{\circ}\text{C}$ or $\pm 0.8\%$ MR @ -20 to 50 $^{\circ}\text{C}$ (MR=measurement/signal range)
Alarm acknowledgement inputs:	Reset 1+2: 0-3V DC (alarm acknowledgement occurs on contact with GND; $U_{MAX}=30V$ DC)
Environmental conditions:	Mounting location: Indoors only up to an altitude of 2,000 m above sea level Temperature for storage: -13 to +140 $^{\circ}\text{F}$ / -25 to +60 $^{\circ}\text{C}$ 0 to 99% r.h (recommended +32 to +86 $^{\circ}\text{F}$ / 0 to +30 $^{\circ}\text{C}$ 40 to 60% r.h.) Temperature for operation: -4 to +131 $^{\circ}\text{F}$ / -20 to +55 $^{\circ}\text{C}$ 0 to 99% r.h.
Housing:	Protection class: IP65 Dimensions: 8.23 x 7 x 2.52 in / 209 x 180 x 64 mm (W x H x D)
Approvals / Certifications:	ATEX approval : 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)



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 All specifications on this brochure are subject to technical changes due to further development.

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