smart
GasDetection
Technologies

Controller Series GMA22

Compact solutions offering remote calibration capability

MADE IN
GERMANY

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Compact solutions offering remote calibration capability

The GMA22 controller is available either as GMA22-MW or as GMA22-MS, which differ only in the type of internal relays. They thus offer maximum versatility for small gas detection solutions. This applies equally to the gases to be detected, as well as to the transmitter selection and the possible safety concepts.

GMA22 with optional mounting plate for DIN rails

Controller for up to 4 measuring points

The compact units for wall mounting optionally monitor one analog (4–20 mA / 0.2–1 mA / ACDC®) or up to 4 digital transmitters (RS-485). Both versions are available with an integrated power supply and as a 24 V DC device.

ACDC (Analog Carrier for Digital Communication) is a patented technology of GfG. It allows an analog transmitter to communicate with a controller via a 4–20 mA line in the same way that a digital transmitter communicates via a bus connection. This allows, for example, for remote calibration of an analog transmitter. However, the prerequisite is that both devices are ACDC-capable.

Differences in relays, versatility in safety

The GMA22-MW and GMA22-MS differ in their configuration of relays and the associated possibilities in applications.

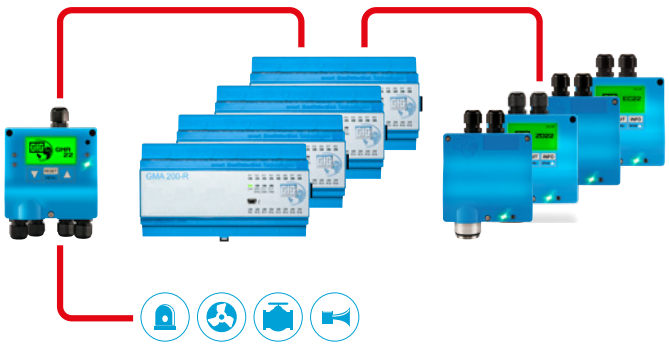
Relays equipped

Typ	Power supply unit	Changeover (CO)	Normally Open (NO)	max. I_{out}
MW	yes	3x	1x	250 mA*
MW	no	4x	-	600 mA*
MS	yes	-	4x	250 mA*
MS	no	-	4x	600 mA*

Relays: 3x alarm, 1x fault message
** Maximum output current (max. I_{out}) temperature dependent*

This results in maximum versatility in the implementation of alarm and security concepts.

Even more flexibility results from the option to address not only the transmitters but also up to 4 additional relay modules of type GMA200-RT or GMA200-RTD via the digital RS485 interface.



GMA22 maximum configuration

Monitoring from a safe distance

Simple stand-alone solutions have their justification, but also two significant disadvantages:

- In the event of an alarm, someone has to approach the hazardous area to read or operate the device
- The alert is only given at the place of installation and the information is not forwarded

A GMA22 enables cost-effective, spatial separation of the transmitter and controller, thus increasing safety. This applies equally to short distances - the controller is then mounted next to the door outside the room to be monitored, for example - and to remote monitoring of measuring points, which can be up to 1200 meters away depending on the transmitters.

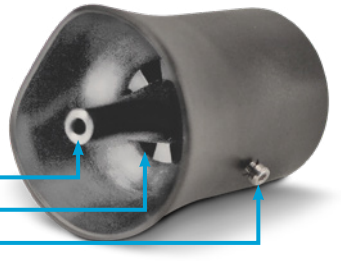
Option for remote calibration of transmitters

Save time and money with the ability to remotely calibrate transmitters. The GMA22 allows transmitters connected digitally or via ACDC to be conveniently calibrated and adjusted via the controller. This means that even transmitters in hard-to-reach mounting locations, such as near ceilings in high rooms or halls, can be checked safely and quickly without ladders, personnel lifts or other aids, and readjusted if necessary.

For this purpose, the transmitter requires a special calibration adapter that does not interfere with normal measurement operation and a permanently mounted hose for feeding zero gas and test gas. The gas is then conveniently supplied from the ground each time. The display of the measured values as well as the necessary confirmations take place on the controller.

Another cost advantage is the possibility to use transmitters without their own display, which furthermore do not have to be opened for maintenance.

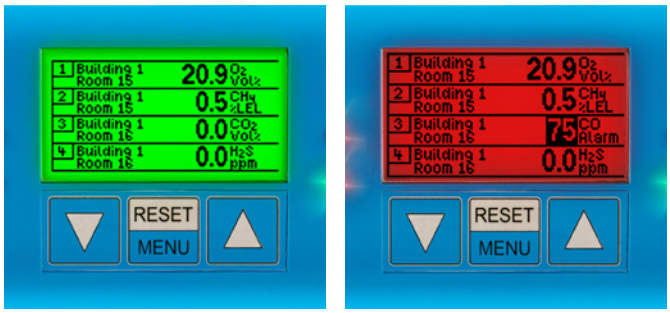
Remote calibration adapter for the transmitter



- Hose connection for feeding zero gas and test gas
- Diffusion openings
- Locking screw

Display and alarm

The current measured values of all transmitters are continuously displayed on the 2.2" LCD. The operating status is indicated by the status LEDs. In normal operation, only the green LED is lit. A yellow LED indicates malfunctions or service work. In the event of an alarm, the background color of the display changes from green to red and only the measured values of the measuring points at which the limit values were exceeded or fallen below are displayed. Red LEDs indicate the alarm level. In addition, an acoustic warning signal sounds.



Measured value overview in normal or alarm state

Operation via pushbutton interface

The three pushbuttons below the display allow easy operation of the GMA. They allow scrolling through the different screen views, acknowledging alarms and navigating the service menu and starting remote calibration.

Data logger

For long-term storage and documentation of the measured values, the GMA22 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.

Technical Data: GMA22-M

Display & controls	
Status LEDs:	4 status LEDs for alarms and operating states
Display:	2.2" graphic display
Pushbuttons:	3 function keys
Alarm:	Horn max. 100 dB(A) adjustable
Environmental conditions	
Mounting location:	indoors only
for the storage:	-25 to +60 °C | 5 to 95 % r. h. (recommended 0 to +30 °C | 40 to 60 % r. h.)
for the operation of the **GMA22-MW**:	-20 to +50 °C | 5 to 95 % r. h. (without internal power supply) -20 to +45 °C | 5 to 95 % r. h. (with internal power supply and max. 150 mA load at U_{out}) -20 to +40 °C | 5 to 95 % r. h. (with internal power supply and max. 250 mA load at U_{out})
for the operation of the **GMA22-MS**:	-20 to +55 °C | 5 to 95 % r. h. (without internal power supply) -20 to +50 °C | 5 to 95 % r. h. (with internal power supply and max. 150 mA load at U_{out}) -20 to +45 °C | 5 to 95 % r. h. (with internal power supply and max. 250 mA load at U_{out})
Energy supply	
	GMA22 with internal power supply / **GMA22 without internal power supply**
Operating voltage Ue:	100-240 V AC mains voltage 50-60 Hz / 24 V DC (20-30 V DC) by stabilized SELV or PELV power supply unit
Power consumption:	max. 25 VA (with transmitters) / max. 6 VA (without transmitters)
	max. 20 W (with transmitters) / max. 5 W (without transmitters)
Fuses:	F1: T315 mA changeable (for TRM) / F1: T630 mA changeable (for TRM)
	F2: 250 mA not changeable (for GMA internal)
Transmitter connections	
	GMA22 with internal power supply / **GMA22 without internal power supply**
Supply output U_{out}:	24 V DC ±5 % supplied by the internal power supply unit, max. 300 mA / 24 V DC (20-30 V DC) supplied by the external power supply unit, max. 600 mA
Analog signal input I_{in}:	4-20 mA or 0.2-1 mA (4-20 mA ACDC capable) Measuring tolerance: ±0.3 % MR @ 4-20 mA or ±1.2 % MR @ 0.2-1 mA (MR = measuring range) (Load approx. 50 to 100 Ω, Imax = 70 mA continuous / 500 mA short-time)
Digital signals RS-485 bus:	RS-485; half-duplex; max. 38400 baud
RS-485 output	
RS-485 bus:	RS-485; half-duplex; max. 38400 baud (only for GMA200 relay modules)
Relay outputs	
Contacts of the **GMA22-MS**:	4 relays with one NO contact each
Contacts of the **GMA22-MW**:	4 relays with one CO contact each (GMA22 without internal power supply) 3 relays with one CO contact each and 1 relay with one NO contact (with internal power supply)
Insulation distances of the **GMA22-MS**:	Double insulation between adjacent relays
Insulation distances of the **GMA22-MW**:	Basic insulation between adjacent relays
Contact rating:	3 A/250 V AC or 3A/30 V DC
Minimum switching current:	10 mA
Minimum switching voltage:	5 V
Data logger (optional)	max. 2 GB microSD card with FAT formatting (FAT16)
USB port	Mini USB socket for device configuration via PC
Housing	
Protection class:	IP64 according to IEC 60529; IK08 according to IEC 62262
Material:	Plastic
Dimensions:	97 x 140 x 50 mm (W x H x D)
Weight:	275 g
Approvals / Certifications	
Electromagnetic compatibility:	DIN EN 50270:2015 (Interference emission: Type class I, Interference immunity: Type class II)
Electrical Safety:	EN 61010-1:2010 (pollution degree 2, overvoltage category II for mains supply) (pollution degree 2, overvoltage category III for relay contacts)
Service life	20 years

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