



Controller GfG GMA200-F

For gas detection in refrigeration systems and heat pumps



**For natural and
synthetic refrigerants**



**Monitors up to
64 digital transmitters**



**8 internal and up to
64 external relay contacts**



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In industrial and commercial refrigeration applications, reliable gas detection systems are an essential part of modern safety concepts.

The GMA200-F controller was specifically developed for applications where toxic or climate-damaging refrigerants must be monitored to protect people, equipment, and the environment.

Typical applications include food processing, cold storage rooms, blast freezers, or production lines, as well as in the beverage industry with tank cooling and CO₂-based refrigeration systems. In logistics as well – particularly in deep-freeze warehouses and fully automated high-bay warehouses with refrigerated zones – the controller, in conjunction with corresponding transmitters from GfG, ensures early detection of refrigerant leaks and reliable alarm activation.

Other applications include central refrigeration systems for supermarkets, ice arenas, and the pharmaceutical and chemical industries, where precise temperature control in cleanrooms and process areas plays a central role. Wherever synthetic or natural refrigerants such as R32, R449A, NH₃ (R717), or CO₂ (R744) are used, a gas detection system with the GfG GMA200-F controller as its central component contributes to system safety.

Combine the GMA200-F with any combination of up to 64 GfG transmitters in eight groups with up to eight different measurement ranges, and expand the system with up to 64 external relay contacts or 64 digital alarm panels with a buzzer.



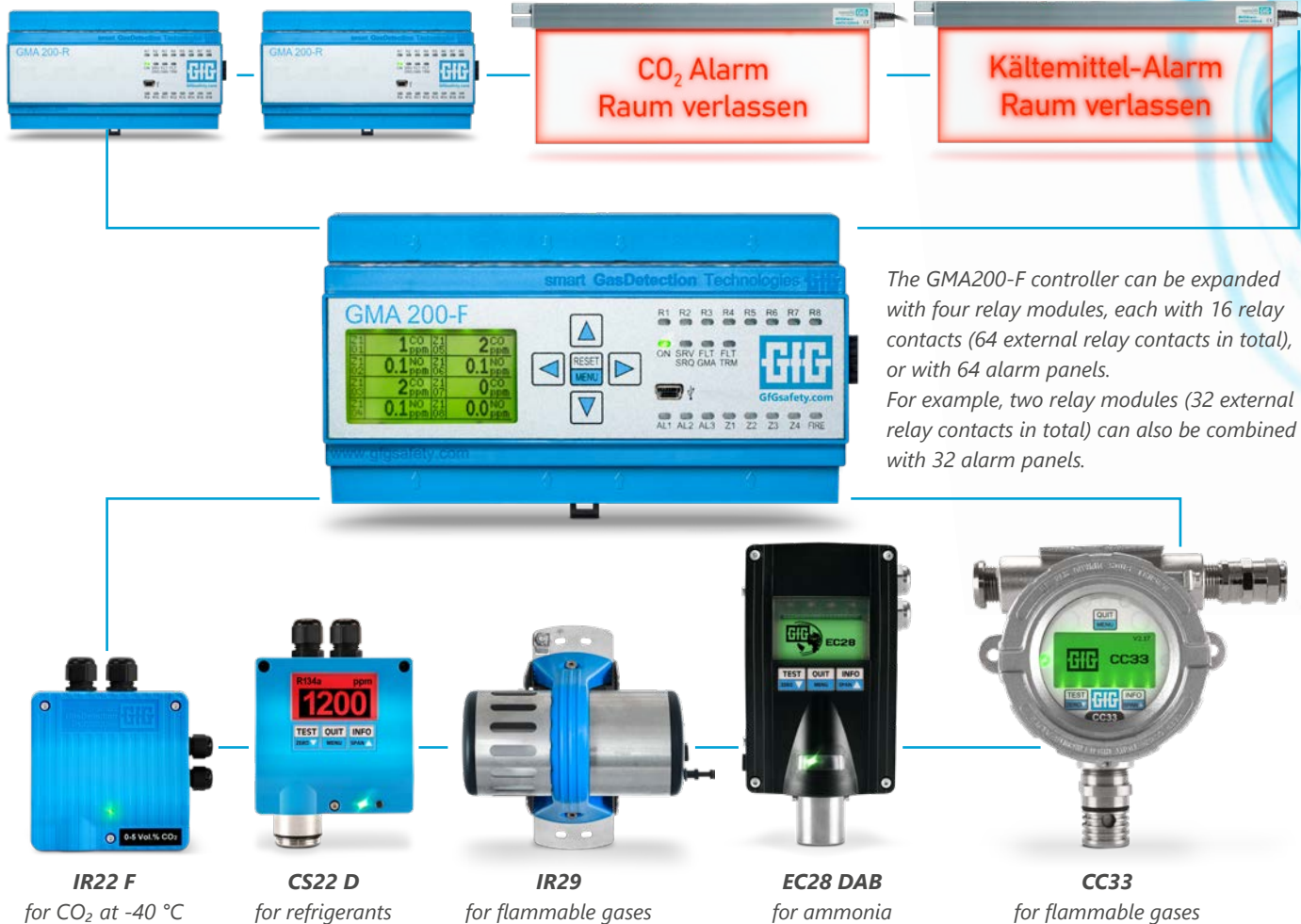
Key features at a glance:

- » Monitoring of up to 64 digital **transmitters** (8 measurement ranges, each with 3 alarm thresholds)
- » 8 internal **relay contacts** (6 freely programmable) and 64 external **relay contacts** or 64 **alarm panels** (addressable via Modbus)
- » 4 **zones** for fan control, 2 digital inputs and 2 analog outputs
- » Internal **event logger** for alarms, faults, and other events

GMA200-F controller for DIN rail mounting (T35) in control cabinets

GMA200-RT relay module

ALP Series alarm panels with integrated buzzer, Modbus, and Bluetooth (optional)



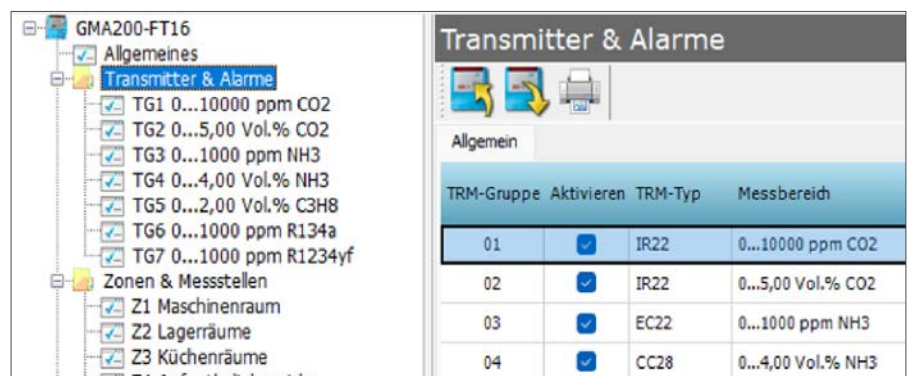
The GMA200-F controller can be expanded with four relay modules, each with 16 relay contacts (64 external relay contacts in total), or with 64 alarm panels. For example, two relay modules (32 external relay contacts in total) can also be combined with 32 alarm panels.

Up to 64 transmitters (including up to 16 analog) can be connected to a GfG GMA200-F controller to monitor natural and synthetic refrigerants. The Modbus ring topology minimizes wiring costs and installation effort.

Transmitters, Expansions, and Configuration

The GMA200-F controller is a further development of the proven GMA200-M controller series. The range of detectable gases has been expanded to include more than ten common refrigerants, such as R508B. Additionally, a single controller can monitor up to 64 measurement points instead of 16.

The user can divide the measurement points into up to eight transmitter groups depending on the measured gas and measurement range. Furthermore, the measurement points can be assigned to four zones independently of their transmitter groups. This enables zone-dependent ventilation control and a clear zone separation when visualizing the gas detection system via the optional GMA200-Visual software (e.g., on a touchscreen PC).



The screenshot shows the GMA-Config software interface. On the left, a tree view shows 'GMA200-FT16' with sub-items 'Allgemeines' and 'Transmitter & Alarme'. The 'Transmitter & Alarme' section is expanded, showing a list of transmitters (TG1 to TG7) and zones (Z1 to Z4). On the right, a table titled 'Transmitter & Alarme' shows the configuration for each transmitter.

TRM-Gruppe	Aktivieren	TRM-Typ	Messbereich
01	☒	IR22	0...10000 ppm CO2
02	☒	IR22	0...5,00 Vol.% CO2
03	☒	EC22	0...1000 ppm NH3
04	☒	CC28	0...4,00 Vol.% NH3

Screenshot of the GMA-Config software showing transmitter, alarm, and zone parameterization

The optionally available GMA-Config software (via USB interface and laptop/PC) is used to configure:

- » transmitters
- » the eight internal relay contacts (six of which are freely programmable)
- » up to 64 external relay contacts or illuminated alarm devices
- » the two digital inputs (e.g., alarm acknowledgment)
- » the two analog outputs (e.g., ventilation control)

In addition, the internal event logger can be read out using the GMA-Config software.

Technical Data: GMA200-F

Gases:	Natural and synthetic refrigerants in combination with GfG transmitters
Connection options:	64 transmitters (of which max. 16 are analog), divided into up to 8 transmitter groups (8 different measurement ranges adjustable) Up to 64 additional, freely configurable relay contacts (via additional relay modules, each with 16 relay contacts) or 64 alarm panels, configurable for individual alarms per measurement point and alarm limit value, configuration of collective or group alarms, fault messages, and voting functions
Inputs:	16 analog inputs 4–20 mA or 0.2–1 mA, max. 50 ohms input resistance 2 digital inputs: e.g., for alarm acknowledgment or service switching; freely configurable 2x RS-485 Modbus RTUs, e.g., for connecting external relay modules or digital transmitters in bus wiring 1x RS-485 Modbus RTU for digital transmission of measurement and output data to a supervisory control system or, in the case of GMA200-FT master functionality, for connecting relay modules
Outputs:	6 relay contacts (normally open) freely configurable for individual alarms per measurement point and alarm limit value, configuration of collective or group alarms, fault messages, and voting functions 1 relay contact each for maintenance and fault (closed-circuit principle) 2 analog outputs: 4–20 mA / 560 ohms max. load, freely configurable
Alarms:	3 independent limit value alarms per measurement point (Alarm 1, Alarm 2, and Alarm 3), freely adjustable within the measuring range
Alarm functions:	» above limit, below limit » Acknowledgable (only the additional buzzer) » cannot be acknowledged » latching / non-latching » Alarm with activation delay (up to max. 3 minutes) » Alarm with off-delay (up to max. 60 minutes)
Data storage:	Internal event logger for 255 events For GMA: Fault, service request, and other messages For transmitters: Alarm, fault, startup, service request, service
Environmental conditions:	Storage conditions: -25 to 60 °C 0 to 99 % RH (recommended: 0 to +30 °C 40 to 60 % RH) Operating conditions: -20 to +50 °C 0 to 99 % RH Installation location: Indoor installation in control cabinets or wall-mounted enclosures on a TS35 mounting rail according to DIN EN 60715, up to 2000 m above sea level
Power supply:	2 x 24 V DC, 20–30 V (1 x redundant power supply)
Power consumption:	GMA200-FT: 5 W without transmitter 30 W with transmitters
Displays and controls:	Display: Backlit LCD display / 2.2" with 132 x 65 pixels Interface: 5 control buttons (RESET/MENU, Up, Down, Right, Left) LEDs: 20 status LEDs (green, yellow, red) Buzzer: Integrated
Housing:	Dimensions: 162 x 97 x 62 mm (W x H x D) Mounting: TS35 mounting rail Material: plastic Weight: 370 g Protection class: IP20
Approvals/Tests:	Electromagnetic Compatibility: EN 50270:2015 (Emission: Type Class I, Immunity: Type Class II) Electrical Safety: EN 61010-1:2010 (Pollution degree 2, Overvoltage category III for relay contacts)



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