

GMA301/304

Fixed Gas Monitoring System



- Intelligent and flexible Gas Monitoring System
- Function tested (GMA301)
- Online data transfer by CAN-Bus
- Simple operation, menu-driven

Worldwide Supplier Of Gas Detection Solutions



GMA301 - flexible and intelligent gas monitor

Structure of a gas monitor

Stationary gas monitors consist of a transmitter and a control module - the GMA301. The transmitter converts the gas concentration to an electrical signal (0.2 .. 1 mA or 4 .. 20 mA) and sends it via cable to the GMA301 controller. The transmission distance may vary up to several hundred meters. The GMA301 digitalizes the sensor signals and passes the values on to its microprocessor, which linearizes the signals.

Flexibility

The digital signal processing gives the monitoring system great flexibility. The GMA301 can filter measurement signals, suppress zeropoint deviations, delay or accelerate alarms or, by recognizing certain trends, activate an alarm even before a dangerous gas concentration is reached. Three variably adjustable alarm thresholds can be set, which may be latching or self-resetting. The customer can activate or alter functions and calculation parameters, to adapt the monitoring system to specific measurement tasks. A service key prevents unauthorized access. Zeropoint and span adjustment can be checked and corrected at the card front, thus simplifying service efforts and saving maintenance costs considerably.

The GMA301 provides 4 potential-free relay outputs for alarm and failure. They can be used for turning on alarm horns or lamps, or for stopping production processes by e.g. closing valves or switching off the current. The relays can be operated as either normally closed (NC) or normally open (NO) contacts. The measurement values are available as an analog output signal of 0 .. 10 V and 4 .. 20 mA. For supporting service the un-amplified sensor signal (0.2 .. 1 V) and the standard signal (0 .. 10 V) can be measured at the front. 4 logic outputs allow the activation of collective gas or failure alarms. Measurement data, alarms and service data are available from the CAN bus. The data can be sent to a computer via the specifically developed GfG software program for recording and documentation.

Choose your own safety level

There is an increasing demand for personal and environmental protection - resulting in demand for increased reliability from gas monitoring equipment. Even very

low gas concentrations may cause hazardous situations. It is an absolute must for a gas monitor to react reliably and quickly. The GMA301 combines state of the art technology and GfG's long experience in gas measurement.

GMA 300 - Controller for all measurement tasks

All GfG transmitters can be connected to the GMA301. More than 500 different gases can be monitored. By means of its 3 adjustable alarm thresholds, the GMA301 ensures reliable warning for gas hazards, no matter if they are caused by combustible or toxic gases or by oxygen deficiency or surplus.

Versatile performance

Its variety of functions make the GMA301 one of the most flexible gas monitoring systems available. All settings are made via touch keys on the front, with a display menu. A coded service key protects the system from unauthorized access.



Alarms to your requirements

The 3 alarm thresholds are adjustable throughout the entire detection range. DIP-switches are used for individually programming the alarm functions latching / non-latching, resettable / nonresettable and exceeding or falling below setpoint. A rise-delay time and a fall-delay time of 1 second up to 100 minutes can be set for each alarm.

Sudden changes of the gas concentration are recognized by the so-called „Delta-Alarm“ even before reaching the pre-set thresholds, as every second counts in explosive atmospheres.

Control function

Activation and de-activation of alarms can be delayed for any time between 1 second and 100 minutes. This means the GMA301 does not require additional time delay relays or controllers.

Analog ...

Four potential-free relays are available for external warning, e.g. alarm lamps or sirens or emergency shutdown of gas conduits or electrical current. Logical outputs can be used for collective alarms from a group of transmitters. The measurement values are available as analog signals (0 .. 10 V resp. 4 .. 20 mA) for further processes. A collective alarm card can be plugged on the GMA301 back panel.

... and digital outputs

All measurement data, alarms and function adjustments are available from a digital interface, the CAN bus, and can be read by every computer. This provides almost unlimited possibilities for data storage and data processing. A specific GfG software program allows professional preparation and documentation of measurement data. Even over extended periods the values can be recorded as charts or graphs. Data transfer to data base and graphic programs are possible also.

All information at a glance

The measurement values are displayed continuously, with trends being shown by the additional bargraph. LEDs clearly indicate alarm, operational mode and signals for every single detection point.

GMA301 - flexible and intelligent gas monitor

Internal communication with convincing intelligence

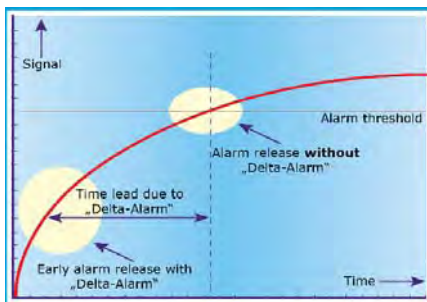
Gas monitoring in production plants requires considerable flexibility from gas warning systems. The GMA301 control modules can exchange data between each other and a computer. This allows a combination of intelligent monitoring equipment adapted individually to your specific requirements. In spite of its computer link the GMA301 remains an independent unit, even a computer failure does not affect the safety of the gas warning system.

Delta Alarm - Time lead over gas hazards

With a sudden outbreak of combustible gases, every second counts to prevent damages. The „Delta Alarm“ of the GMA301 gives you the decisive lead. The intelligent GMA301 immediately recognizes an extraordinarily quick increase of gas concentration and activates an alarm before a hazardous situation builds up. Three Delta Alarms are available in addition to the three standard alarm thresholds.

Datalogger

The GMA301 datalogger stores instantaneous values including date and time. The data are stored either in the „brain“ of the GMA301 or are sent continuously, online, to a PC via the digital output. Recording of measurement data by means of a printer and storing the paper rolls can be eliminated. The capacity of the datalogger allows to store data of up to 12 months. At any time you can transfer data from the datalogger to a PC. The datalogger is supported by a battery to save the stored data even in case of mains failure.



Time lead with the „Delta-Alarm“

Single or collective alarm

The potential-free contacts of the GMA301 are activated as soon as the alarm setpoint for a detection point is exceeded. At the same time logical outputs control the relays for

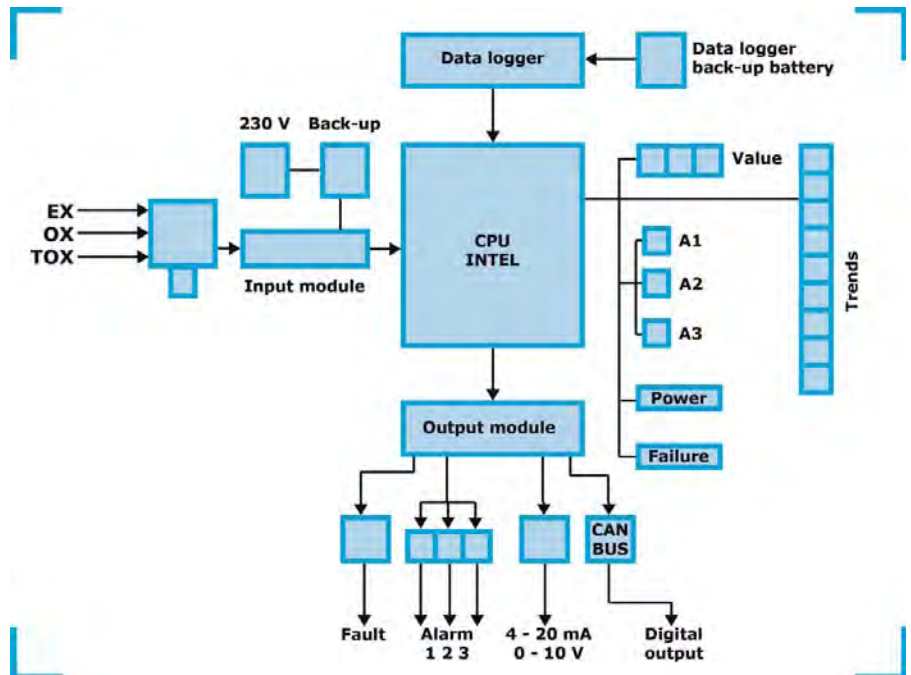
collective alarms and alarm horn on the relay module GMA301 RB, thus avoiding costly wiring for collective alarms. Just group the required number of control modules. In addition to this, the key-operated switch GMA SW provides alarm suppression during service.

Battery back-up

A gas warning system must give a reliable warning particularly in situations when not everything is going well. For the GMA301 GfG developed a special battery backup. Taking the space of only 3 control modules, the back-up system provides emergency power supply for controllers and remote sensors for a period of up to 12 hours, depending on type and quantity of transmitters.

Transmitters

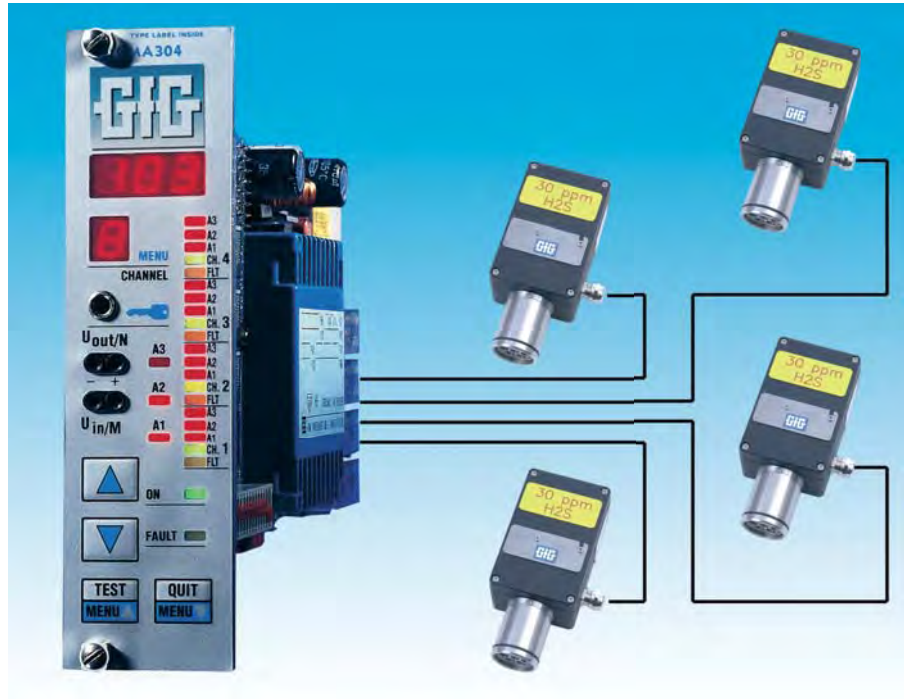
GfG transmitters allow even complex monitoring tasks. EX measurement is needed where combustible gases may build up explosive atmospheres, TOX measurement is required for TLV monitoring of toxic gases and OX measurement detects the oxygen content of the ambient air.



GMA304 - variable and compact

The 4-channel control module

The GMA304 accepts the signals from up to 4 transmitters, i.e. only one controller is monitoring four detection points at the same time. The 4-channel control module provides the same variety of functions as the GMA301. The bargraph display of the GMA 304 indicates alarm, operational status and failure individually for every transmitter. Different LED colours guarantee immediate and safe information at a glance. The GMA304 provides collective alarms for the connected sensors.



GMA301 / GMA304 Technical Data

Gas:

depending on transmitter ,
combustible and toxic gases and
vapours, oxygen

Detection range:

depending on task
% LEL, % Vol., ppm

Ambient temperature:

-10°C .. +55°C

Humidity:

0 .. 99 % r. h.

Power supply:

230/115 V AC, 50/60 Hz or 24 V DC
or 24 V DC back-up power supply

Power consumption:

max. 13 W

Input signal:

0.2 .. 1 mA / 4 .. 20 mA

Output signal:

CAN open
4 ... 20 mA

Relay output:

4 voltage free contacts for alarm and
fault, NO, NC, load: 250 V / 4 A

Display:

3 digit LED display for concentration
readings and programming
1 LED green for operation
1 LED yellow for failure
3 LED red for alarm 1, 2 and 3

Alarm functions:

Exceeding / falling below,
latching / self resetting,
resettable / non-resettable,
adjustable hysteresis,
alarm relay

Function keys:

Service code keys for service menu,
maintenance resp. for changing of
parameters.
4 push buttons for changing of
parameters and for access to menu
points

Test sockets (front):

Transmitter signal, standardized output
signal: 0 .. 10 V

Dimensions:

35.2 x 129 x 16 mm (W x H x D)

Function test:

GMA301 (type GMA300)
DMT Report IBS/PFG 41300596

Ordering information:

GMA301 (Type GMA 300)

Single channel controller
PFG-function test incl. 4 relays, 230 V

GMA301: Single channel

controller 24 V

GMA304: 4 channel

controller 24 V, 230 V upgrade,
GMA R 4 relays

Relay module:

GMA RB

Key switch:

GMA SW

Housing:

Wall mount casings for 2, 4, 7, 12, 24,
36 or 48 control modules
Panel mount casings for 2, 4, 7 or 12
control modules
Cabinets

Accessories:

Alarm horn
Small siren
Ex-Alarm horn
Flashlight
Beacon
Ex-Flashlight
Power supply module
GMA SPG

Back-up power supply:

GMA-NAV 1 21TE



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