Bieler+Lang

Gasmesscomputer GMC 8420

from Version 1.0

Output Extension RK 8420

Data Sheet

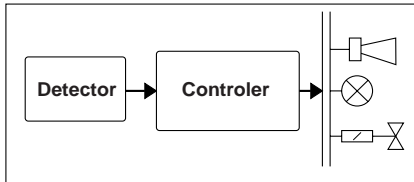# Gas Detection and Warning Systems

Application

The controller Gasmesscomputer GMC 8420, in conjunction with detectors that supply 4-20 mA output signals, has the following functions:
- Measurement and display of the gas concentration
- Monitoring these gases and warning of their presence
- Triggering protective measures to counter increasing concentration.

Set-up

A gas warning installation consists of the following components:
- An evaluation system
- A detector
- Controllable devices, such as:
  - fans
  - solenoid valves
  - horns
  - illuminated warning signs

Product Features

Evaluation System GMC 8420

- Type of installation: wall-mounting
- Four measurement channels
- Concentration display
- Two alarm stages and additional horn output
- Microprocessor technology provides numerous functions and simple operation
- Verification of alarm signal without test gas
- Fault monitoring for:
  - mains failure
  - computer defect
  - wire break / short circuit of sensor leads
- Potential-free relay outputs for:
  - 3 freely programmable relays for Alarm 1, Alarm 2, Horn
  - 1 error message relay

Output Extension RK 8420

- Type of installation: wall-mounting
- Optional extension of relay outputs
  - 4 freely programmable relays for Alarm 1, Alarm 2, Horn

How It Works

The controller is designed to be connected to up to four gas detectors with 4…20 mA signal interfaces. In the event of an alarm, the relay outputs of the controller can switch technical safety measures, for example, to close a solenoid valve in a gas supply line. A built-in buzzer provides an acoustic alarm.
In addition the unit has four built-in DC switches for 32 VDC/ 200 mA, which can be used for further switching operations.

The Ready LED shows that the controller is ready for use. The Measure LED indicates each measurement. There are also visual indicators for error, pre-alarm and main alarm for each measurement channel. A fault message (Error LED) is given when the signal is outside the measurement range. The Error LED also indicates a wire break in the detector leads. LEDs A1 and A2 signal when a pre-alarm or main alarm is given. The present reading is shown in the display. The channel number is displayed so that a concentration reading can be correctly assigned. By briefly pressing the Stop button for any desired channel, its reading is continuously displayed. An alarm threshold can be freely assigned to the Horn output which controls an external acoustic device and the built-in buzzer.

For the control of technical equipment and warning devices there are three freely programmable output relays (230VAC/4A). These can be programmed with the messages Alarm 1, Alarm 2 or Horn. A further output relay is permanently assigned to the Error function.
The output extension RK 8420 can be connected at the integral DC switch. This module provides the option of four more freely-programmable output relays (230VAC/4A).

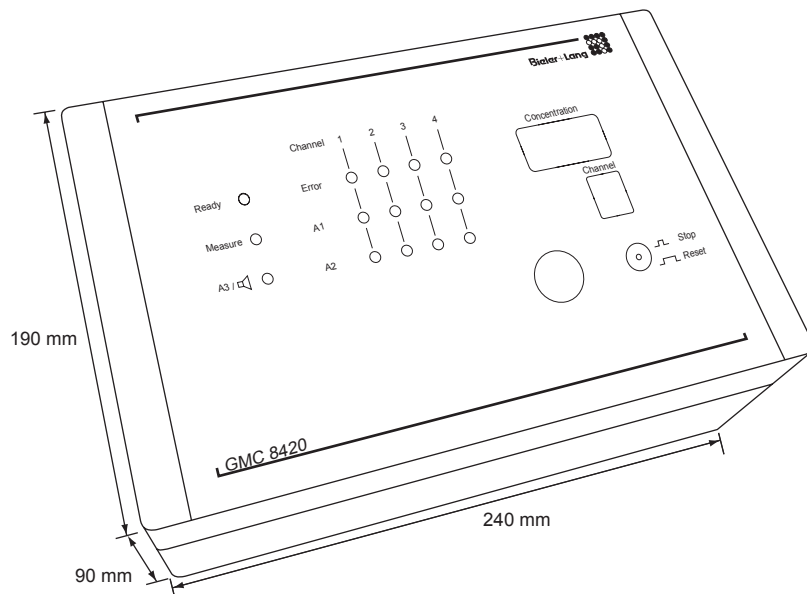Parameters can be freely set for each measurement channel:
- Alarm threshold for Alarm 1
- Alarm threshold for Alarm 2
- Alarm when signal is outside measurement range
- Alarm latching / non-latching
- Zero capture

The system parameterisation is carried out using an RS232 interface. For this operation a simple terminal emulator is necessary. As a rule this software is provided by all operating systems, or it is available on a free licence.

Technical Data
GMC 8420

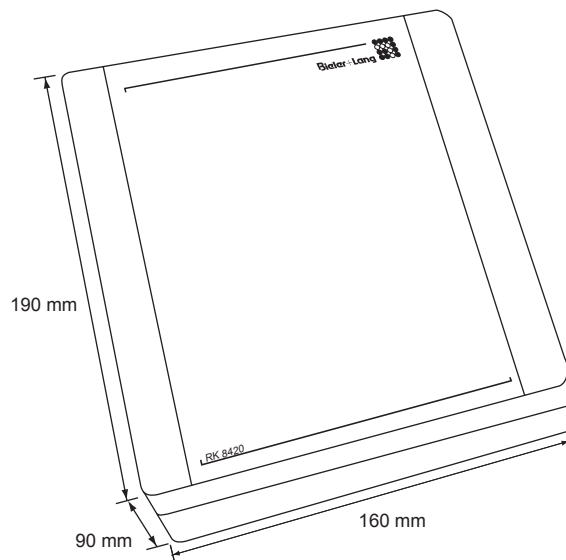|	
Number of detectors that can be connected	Max. 4 detectors
Detector inputs	4x 4-20 mA
External reset	Yes
Outputs	Potential-free changeover contacts (230 VAC, 4A): - 1x Error - 3x programmable for Alarm 1, Alarm 2, Horn PhotoMOS relay (32 VDC, 200 mA) - 4x programmable for Alarm 1, Alarm 2, Horn
Alarm device	Built-in 85dBA signal horn
Display elements	- Display for concentration - Display for channel number - LEDs for Alarm 1, 2, Error, Ready, Measurement
Power supply	100 - 240 VAC, 50 - 60 Hz, 20W
Emergency power supply	1x 24VDC emergency power supply input
Distribution terminals	For each: 6 terminals for N and PE, 3 for L
Temperature range	-10°C to +40°C
Relative humidity	10 – 95% r.h. (non-condensing)
Air pressure	800 – 1200 hPa
Ambient conditions	- Can be used up to 2000 m above sea level - Protect from direct sunlight
Storage conditions	-10°C to +70°C 10 – 95% r.h. (non-condensing)
Degree of protection	IP44
Housing	Wall-mounting plastic housing (240x190x90 mm)
Weight	1300 g
Anticipated useful life	Typically > 8 years

Connections	- Mains connection:
	  cable gland for 7-14 mm dia. cable
	 - Cable entries for sensors and switched
	  outputs: double-diaphragm sockets,
	  sealing range 5-9 mm

Electrical safety	EN61010
EMC requirements	EN50270 (Type 2) EN61000-6-3

Technical Data
RK 8420

Outputs	Potential-free changeover contacts (230 VAC, 4A): - 4x programmable for Alarm 1, Alarm 2, Horn
Inputs 4	x control inputs from GMC 8420
Power supply	Power supply from GMC 8420
Distribution terminals	6 terminals (L, N, PE) for each
Temperature range	-10°C to +40°C
Relative humidity	10 – 95% r.h. (non-condensing)
Air pressure	800 – 1200 hPa
Ambient conditions	- Can be used up to 2000 m above sea level - Protect from direct sunlight
Storage conditions	-10°C to +70°C 10 – 95% r.h. (non-condensing)
Degree of protection	IP44
Housing	Wall-mounting plastic housing (160x190x90 mm)
Weight	750 g
Anticipated useful life	Typically > 8 years
Connections	2x cable glands for 7-14 mm dia. cables 5x double-diaphragm sockets, sealing range 5-9 mm
Electrical safety	EN61010
EMC requirements	EN50270 (Type 2) EN61000-6-3

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Accessories

- Horns
- Warning lights
- Solenoid valves
- Central emergency power supplies
- Connection cables for programming (USB)

Service

Everything from a single supplier - from system design to installation of your new gas warning system. This is backed up with comprehensive coverage by our sales and service network. Ask us about regional representatives in your area. And after purchase our service technicians are ready and willing to help and advise.

Customer-specific Installations

Our sales representatives and service technicians are always available to help solve your measurement and control problems. A wide-ranging programme of equipment, housings and accessories combined with decades of experience enable us to design and install measurement systems especially adapted to your applications.

We reserve the right to make technical changes!