PolyGard® Gas Controller Module GC-05

DESCRIPTION

Measuring, warning and controlling module for toxic, combustible and refrigerant gases and vapours.

The gas controller GC-05 can monitor and process up to 98 digital or four analog (4 to 20 mA) transmitters. Five free adjustable alarm thresholds are provided per transmitter. For the alarm messages, five alarm relays with potential-free changeover contact and two analog outputs (4 to 20 mA) are available. Up to 96 analog gas transmitters, 30 alarm relays and 12 analog outputs can be connected by using the extension modules EP-05.

The free adjustable parameters and set-points enable a very flexible use in the gas measuring technique. Simple and comfortable commissioning is granted by default parameters.

Configuration, parameterization and operation are easy to do without special programming knowledge due to the logical, simple menu structure directly at the controller. The DGC-EasyConf Software enables the loading, changing and storing of the application parameters via a serial interface.

The gas controller GC-05 is equipped with a self monitoring system, with power failure message as well as with a functional control of the registered digital/ analog transmitters according to the requirements of the gas measuring technique.

The optional data logger function permits to protocol all measured values, alarms and faults.

GC-05 module

GC-05 module for door mounting with mounting plate

APPLICATION

The gas controller GC-05 is used for the monitoring and warning of toxic and combustible gases as well as of Freon refrigerants within a wide range of the gas measurement technique. Numerous adjustable parameters and set-points permit individual adaptation to many applications.

The GC-05 fulfills the functions of monitoring Carbon monoxide (CO) in garages, tunnels and kart tracks etc. according to VDI 2053 and ÖNORM. Additionally ammonia (NH_3) refrigerant plants can be monitored in accordance with the requirements EN 378, VBG 20 and the guideline "safety regulations for ammonia refrigeration systems".

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FEATURES

- Four analog inputs, 4 to 20 mA (standard)
- Extendable to max. 98 PolyGard transmitters of the ADTX3 series and/or MA/MD series via repeater and/or EP05 modules
- Transmitters can be connected in digital (RS 485) and/or analog (4 to 20 mA) mode.
- For monitoring more than 30 toxic, combustible or refrigerant gases, temperature and humidity
- Simple and comfortable commissioning by configuration with standard parameters
- Logical system menu
- Flexible configuration by programmable parameters and set-points
- Five free adjustable alarm thresholds per transmitter
- 6 menu languages free adjustable New
- Several alarm relays configurable per alarm New
- Adaptation of the transmitter communication (digital and/or analog) in the menu New
- Stored alarms resettable via a digital input New
- Temporary locking of transmitters possible for the customer New
- Alarm release selectable for falling or increasing gas concentrations New
- Connector for DGC-EasyConf at the controller module New
- Four alarm relays with change-over contact, potential-free, max. 250 VAC, 5A
- Fault relay with change-over contact, potential-free, max. 250 VAC, 5A
- Two analog outputs, 4 to 20 mA
- Max. 23 EP-05 modules (96 analog inputs, 30 alarm relays, 12 analog outputs) connectable New
- VDI - 2053 conform
- UL/ EN-61010 conform New
- Suitable for rail mounting (in electric distribution box)
- Option: Flashing light at power failure
- Option: USB port for data logger function, for all measured values and alarms/ faults New
- Option: Serial interface with ModBus protocol for the connection to BMS etc. New
- Option: Serial interface TLS protocol New
- Option: Door mounting[1]

[1] Version door mounting comes with two modules, display module for door mounting and relay module for rail mounting.

TECHNICAL DATA

Electrical	
Power supply	24 VAC/DC -10% + 20%
Power consumption	4 W, 150 mA
Analog input (4)	4 to 20 mA, overload and short-circuit protected, input resistor 200 Ω
Tension for external analog transmitters	24 VDC, max. 50 mA / per transmitter
Analog output (2) adjustable to each channel	4 to 20 mA, overload and short-circuit protected, input resistor 500 Ω
Alarm relays (4)	250 VAC, 5 A, potential-free, change-over SPDT
Fault relay (1)	250 VAC, 5 A, potential-free, change-over SPDT
Visualization	
Display	2 lines, 16 characters each, illuminated
Status LED	Operation – Fault – 1st alarm – ≥ 2nd alarm
Operation	6 push-buttons
Menu language (selectable)	German, English, Dutch, USA, French, Swedish
Interface field bus	
Transceiver	RS 485 / 19200 Baud
Gases	
Gas Transmitters ADT-X3 and MA/MD	Toxic, combustible and refrigerant gases
Environmental conditions	
Humidity	15 – 95 % RH non-condensing
Working temperature	-10 °C to + 40 °C (14 °F to 104 °F)
Storage temperature	0 °C to + 40 °C (32 °F to 104 °F)
Physical	
Enclosure	Plastic housing ABS
Colour	RAL 7035
Protection class	IP 40
Weight	0.3 kg (0.6 lbs.)
Mounting	Top DIN rail, in distribution box
Dimensions (W x H x D)	104 x 86 x 56 mm (4.1 x 3.4 x 2.2 in.)
Wire connection: Power supply Output Input	Screw type: 2.5 mm^2 (14 AWG) 2x spring: min. 0.5 max. 1.5 mm^2 (22 - 16 AWG) Spring t.: min. 0.5 max. 1.5 mm^2 (22 - 16 AWG)
Guidelines	EMC – Directive 2004/108/EC; Low voltage directive 2006/95/EC VDI 2053 EN 61010-1:2010 ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1
Warranty	One year material and workmanship
	Options
Flashing light at power failure	Battery backed LEDs
Operation duration	10 h (flashing)
Analog input 0 – 10 V	
Min. load	25 kΩ
Data Logger	
Function	Storage of measured values, of alarm status and faults with time and date stamp on an USB
Log rate	Log rate adjustable from 10 to 10,000 sec.
Data format	Output of the data in standard Excel format
Interface ModBus RTU RS 485	
Function	Transmission of all current/ average values, of status alarm relays and analog inputs to extern. devices in ModBus RTU RS 485 protocol

ORDERING INFORMATION

GC-05-XXXXXX-XX

Special version[1]	

[1] Is defined by MSR-E.

	Options
1XXXXX	Power failure flashing light
X1XXXX	Analog input 0 – 10 V
XX1XXX	Door mounting without mounting plate
XX2XXX	Door mounting with mounting plate
XX3XXX	Door mounting without mounting plate, lockable
XXXX1X	Data Logger function & USB stick
XXXXX1	Interface ModBus RTU RS 485
XXXXX4	Interface TLS Protokoll RS 485

WIRING CONNECTION