

PolyGard® Digital Gas Controller DGC-03

DESCRIPTION

Gas measuring and monitoring controller based on state-of-the-art micro-technology with internal buzzer for the continuous monitoring of the ambient air and detecting carbon monoxide, nitrous oxides and LPG.

The DGC-03 can monitor up to 16 digital transmitters of the μ -Gard series MD via the RS 485 bus. Alternatively it can also monitor 8 digital MD transmitters each combined with an analog transmitter of the μ -Gard series MA. Up to four alarm thresholds are free programmable per input at the basic unit. Two alarm relays and one open collector output are provided for the alarm messages. Relay modules REL-03 are available in different versions for further alerting.

Configuration and operation are possible via the logical, simple system menu structure without specific programming knowledge.



APPLICATION

The DGC-03 is especially designed for the use in underground garages and multi-storey car parks of smaller size.

The DGC-03 gas controller fulfils the functions of monitoring carbon monoxide (CO) in garages according to VDI 2053, ÖNORM, NEN 2443 etc.



FEATURES

- Maximum 16 transmitters MD or 8 MD transmitters with one MA analog transmitter each
- Especially suitable for monitoring underground garages and car parks
- Logical menu structure in different languages
- Simple, fast commissioning due to pre-configuration with standard parameters and set-points
- Comfortable calibration and maintenance
- Four free programmable alarm thresholds per channel
- Modular design (plug-in technology)
- Serial interface RS 485
- Two alarm relays, potential-free, max. 30 V AC/DC, 0,5 A
- One open collector output, max. 24 V DC, 50 mA
- (0) 4 – 20 mA / (0) 2 – 10 V analog signal output
- IP 65 version
- Enclosure fire-resistant according to UL 94V2
- Integrated warning buzzer with reset function internal/external
- Approved according to EN 61010-1; ANSI/UL 61010 1; CAN/CSA-C22.2 No. 61010-1
- 230 V AC power supply (option)
- Uninterruptable, battery backed emergency power supply (option)
- Power relays (250 VAC, 5 A) (option)
- Communication module for MODBus, BACNet or printer (option)
- LED flash signal (option)

SPECIFICATIONS

Electrical	
Power supply	18 - 28 V DC, reverse polarity protected
Power consumption (basic unit without options)	100 mA, max. (2.5 VA)
Analog output, current or voltage selectable	
	(0) 4 – 20 mA, charge $\leq 500 \Omega$ (0) 2 – 10 V, charge $\geq 50 k\Omega$ overload-proof and short-circuit-proof
Alarm relay (1)	30 V AC/DC 0.5 A, potential-free, SPDT
Alarm relay (1)	30 V AC/DC 0.5 A, potential-free, SPNO/SPNC
Binary output (1)	30 V DC /0.05 A open collector output
Visualisation	
LCD	Two lines, 16 characters each
Status LED (4)	Normal operation- Fault- Alarm1- \geq Alarm 2
Operation	4 push-buttons – menu-driven
Menu language	German, English, USA, Dutch, French, Spanish
Buzzer	
Acoustic pressure	83 dB (A) (distance 200 mm / 0.6 ft.)
Frequency	2300 Hz
Serial interface field bus	
Transceiver	RS 485 / 19200 Baud
Gases	
Gas transmitter MD and MA series	CO, NO, NO ₂ , LPG
Operating environment	
Humidity	15 – 90 % RH non-condensing
Working temperature	-10 °C to + 50 °C (14 °F to 122 °F)
Storage temperature	5 °C to 30 °C (41 °F to 86 °F)
Pressure range	Atmospheric $\pm 10 \%$
Physical	
Enclosure plastic type	Polycarbonate
Flammability	UL 94 V2
Enclosure colour	RAL 7032 (light grey)
Dimensions type C (W x H x D)	130 x 130 x 75 mm (5.12 x 5.12 x 2.95 inch.)
Dimensions type E (W x H x D)	130 x 130 x 99 mm (5.12 x 5.12 x 3.90 inch.)
Weight	Approx. 0.6 kg (1.323 lbs.)
Protection class	IP 65
Installation	Wall mounting
Cable entry	Standard 6 x M 20
Wire connection	Screw type terminal, min. 0.25 mm ² (24 AWG) max. 2.5 mm ² (14 AWG)
Guidelines	
	EMC Directives 2004/108/EC Low Voltage Directive 2006/95/EC EN 61010-1:2010 ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1 CE VDI 2053
Warranty	1 year on material

GAS ALARM SYSTEMS

Options	
Power supply 230 VAC	90 - 230 V AC 50/60 Hz
UPS	
Battery backed supply for controller, transmitter and warning signs	Supply duration 60 minutes, maintenance-free rechargeable batteries with charging function and deep discharge protection
Housing	Plastic housing with view cover
Colour	RAL 7035
Protection class	IP 65
Weight	ca. 3.8 kg (6.6 lb)
Mounting	Wall mounting
Cable entry	M 16; M 20
Dimensions: (W x H x D)	298 x 260 x 140 mm (11.7 x 10.2 x 5.5 in.)
Flashing light at power failure	Battery backed LEDs
Operation duration	10 h (flashing)
Flashing light	
Acoustic pressure	IP65, LED, 3500 lm.
Warning light	
Power supply	18 -28 V DC/AC
Consumption	45 mA, max. (1.1 VA)
Protection class	IP 65
Power Relays (max. 3)	
	250 V AC/DC 5 A, potential-free, SPDT
Communication module MODBus	Technical data, function and protocol see datasheet DB-Mod05
Communication module BACNet 05	Technical data, function and protocol see datasheet DB-BAC
Communication module printer	Technical data, function and protocol see datasheet DB-Print05

ORDERING INFORMATION

Version	
A	8 dig. MD + 8 analog transmitters MA
B	16 digital transmitters MD
D	MSR_D_Bus Protocol (for 3 wire Fieldbus)

Housing	
C	Plastic (standard)
E	Plastic for option power relays

Power supply	
0	24 V DC (standard)
1	230 V AC
2	230 V AC & UPS ¹

¹ In a separate housing

Relay 30V 0,5A	Relay 30V 0,5A	Intern. buzzer (B)	Open collector	Standard configuration alarm outputs
--	--	B	--	Optional configur. alarm outputs
--	--	1	1	Internal warning buzzer
2 ²	2 ²	2 ²	2 ²	LED flashing light red (max. 1 LED)
4	4	4	4	Power relays (max.3 relays)
5	5	5	5	Warning light orange (max.1 orange)
7	7	--	--	Warning light red (max. 1 x red)
8	8	--	--	Power relays & warning light orange
				Power relays & warning light red

² not with LED flashing light

Alarm 1	Alarm 2	Alarm 3	Alarm 4

Power fail flashing light	
0	Without
1	With

Configuration	
0	Standard
1	Customer specific ³

³ According to customer's specs
⁴ Technical data/ Ordering no. see datasheet module. Always mounted in separate housing.

DGC-03-X-X-X-XXXX-XXX-XX-X

Communication module ^{4,7}	
0	Without communication mod.
X	RS 485 / MODBus RTU
X	RS 485 / BACNet 05 (TCP/IP)
X	Printer

Menu language	
0	German
1	English
2	USA
3	Dutch
4	Danish
5	Czech
6	French
8	Swedish
9	Spanish
Y	Special language ⁵

⁵ on request

Number ⁶	External relay module ⁷
A	24 V DC / 2 relays, 30 V AC/DC, 0,5 A
B	24 V DC / 2 relays, 250 V AC/DC, 5,0 A
C	230 V AC / 2 relays, 30 V AC/DC, 0,5 A
D	230 V AC / 2 relays, 250 V AC/DC, 5,0 A
E	230 V AC / UPS / 2 relays, 30 V AC/DC, 0,5 A
F	230 V AC / UPS / 2 relays, 250 V AC/DC, 5,0 A
G	230 V AC / WT-master, 7 WT
H	230 V AC / UPS / WT-master, 7 WT

⁶ Max. 2 relay modules per system!
⁷ Not with MSR_D_Bus protocol!

Example: DGC-03 for 16 bus transmitters MD, plastic housing for power relay, 24 V DC power supply, power relay at alarm 2, power fail flashing light, standard configuration, print module, 2 relay modules 24 V DC / 2 relays 250 V AC, language English

Ordering number: DGC-03-B-E-0-0200-10X-2B-1

SYSTEM OVERVIEW

