

PolyGard® Printer Communication Module PR-05 for the DGC-05 System

DESCRIPTION

The Bus Communication Module PR-05 works as data server and protocol translator between the DGC-05 system and a serial printer.

The Communication Module can be mounted in the central unit as well as in the field. The field version device is delivered with a separate housing.

A power supply unit (230 VAC / 24 VDC) is available for the field version in order to increase the supply voltage in the field.



APPLICATION

The PR-05 Communication Module is used in the DGC-05 system as data conversion module. Via a serial interface, the module passes all important data from the internal DGC-05 system to a printer or to a PC used as data server.



FEATURES

- Protection of the field-bus inputs against over-voltage and reverse polarity
- 4 terminals for outgoing and return lines of the DGC-bus cable
- Supply voltage 24 VDC
- Signal amplification for cable lengths > 900 m / 2700 ft. (repeater)
- Suitable for rail mounting
- Option: Housing for field installation
- Option: Power supply unit 230 VAC / 24 VDC, 1.0 A, installed in the housing for field installation

TECHNICAL DATA

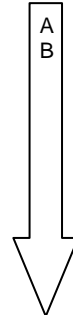
Electrical	
Power supply	24 VDC (16 VDC to 30 VDC)
Power consumption	0.7 W, 30 mA
Fieldbus current	Max. 1.0 A
Over-voltage protection	Max. 35 V
Reverse polarity protection	Max. 30 V
Repeater	
Signal repeater	Max. 900 m /2700 ft. segment length
Environmental conditions	
Humidity	15 – 95 % RH non condensing
Working temperature	-10 °C to + 70 °C (14 °F to 158 °F)
Storage temperature	0 °C to + 50 °C (32 °F to 122 °F)
Physical	
Enclosure	Plastic housing ABS
Colour	RAL 7035
Protection class	IP 40
Weight	0.1 kg (0.2 lbs.)
Installation	Top hat rail installation
Connection	Spring type: 0.5 to 1.5 mm ² (AWG 22 to 16)
Dimensions (W x H x D)	36 x 86 x 56 mm (1.4 x 3.4 x 2.2 in.)
Housing of repeater for field installation	
Enclosure	Plastic housing ABS
Colour	RAL 7035
Protection class	IP 55
Weight	0.5 kg (1.1 lbs.)
Installation	Wall/ ceiling installation
Dimensions (W x H x D)	112 x 152 x 76 mm (4.4 x 6.0 x 3.0 in.)
Housing of repeater for field installation incl. power supply unit	
Enclosure	Plastic housing ABS
Colour	RAL 7035
Protection class	IP 55
Weight	1.5 kg (3.2 lbs.)
Installation	Wall/ ceiling installation
Dimensions (W x H x D)	200 x 250 x 100 mm (7.9 x 9.8 x 3.9 in.)
Power supply unit for field installation	
Power supply	110/230 VAC 50/60Hz
Secondary	24 VDC, 1.0 A max. overload and short-circuit proof
Guidelines	EMC Directives 2004/108/EC; EN 61010-1:2010 ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1
Warranty	1 year on material

ORDERING INFORMATION

DGC-PR-05-XXXX

Options

1XXX	Housing / field installation
X1XX	Field installation incl. power supply unit 230 VAC /24 VDC 1.0A
XX1X	With RS485 output
XX2X	With RS232 + RS485 output
XXX0	Language German
XXX1	Language English
XXX2	Language USA
XXX3	Language Dutch
XXX4	Language Danish
XXX5	Language Czech
XXX6	Language French



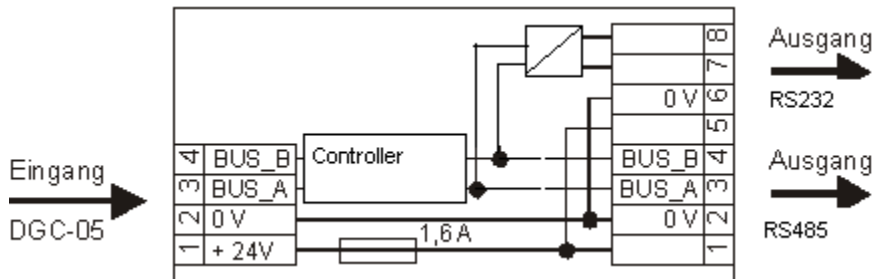
Order No. In the DGC-05 datasheet

DGC-X5-XX-X-X-XX-XXXXXX_XX

Example: Module for field installation without power supply unit, with RS485, language English

Order number: **DGC- PR-05-1011**

WIRING CONNECTION



- Pin 6: 0 VDC (purple)
- Pin 7: RS232 Data Out (brown)
- Pin 8: RS232 Data Ready IN (+) (orange)

COMMUNICATION AND PARAMETER DEFINITIONS

Definition of the Communication:

The data output of the module is done by means of the ASCII Data. Print commands are inserted, SI(0x0F) for start detection and CR(0x0D) for end of the line. The device is tested with the printer Citizen CBM 920II-40RF with 40 characters per line. All other printers working with the same control characters can be connected without further modification.

Version F/W Ver :1.3000
 Interface : Serial
 Baudrate 19200
 Databits 8
 Parity None
 Character Normal
 CR Mode **ON**

If no printer is used, but a PC is used for data recording, the signal DTR (Data Ready) has to be switched to +12V (e.g. via a 12V Zener diode from pin 5 to pin 8).

Data Output:

All information are continually read from the DGC with date and time and displayed in the format:

Day.Month.Year Minute.Hour

Example:

21.04.11 11.14

The following information is sent as data to the output device:

1. Malfunction of the DGC System

1.1 Coming error message

If the relay 5 (fixed assignment) is switched from ACTIVE to OFF, this fact is recognized as a coming error message, and recorded.

If the error message should not to be output, the fifth relay has to be parameterized as not used.

Example:

21.04.11 11.14 + System error

1.2 Leaving error message

If the relay 5 (fixed assignment) is switched from OFF to ACTIVE, this fact is recognized as a leaving error message and recorded.

Example:

21.04.11 11.14 - System error

2. Maintenance Message of the DGC System

2.1 Coming maintenance message

If the system is operated with the Service Tool or the Easy Config Software with the outer switch setting (sensor mode), this fact is recognized as a coming maintenance message, and recorded.

The alarms of the related sensors remain inactive then.

The current time isn't continually synchronized with the DGC during this period.

Example:

21.04.11 11.14 + Service ON

2.2 Leaving maintenance message

If the maintenance is switched from ACTIVE to OFF in the DGC, this fact is recognized as a leaving maintenance message, and recorded.

Example:

21.04.11 11.14 - Service OFF

3. Alarm messages of the DGC System

The outputs 1-4 of the master module and of each of the 5 registered and available EP modules form one alarm zone.

The relays 1 and 2 have to be parameterized in alarm-free status ON (active) and the relays 3 and 4 in alarm-free status OFF.

All related sensor alarms of a zone have to be assigned to the corresponding module.

3.1 Coming alarm messages

If an alarm relay of a zone is switched from INACTIVE to ACTIVE (even via manual mode) in the DGC, this fact is recognized as a coming alarm message, and recorded.

Example:

21.04.11 11.14 + Zone1 Alarm2

3.2 Leaving alarm messages

If an alarm relay of a zone is switched from ACTIVE to INACTIVE (even via manual mode) in the DGC, this fact is recognized as a leaving alarm message, and recorded.

Example:

21.04.11 11.14 – Zone1 Alarm2

4. Average display of the DGC System

The 20-minutes averages of a zone are calculated in the DGC. The first analog output of the master module and the corresponding first analog output of the 5 registered and available EP modules transmit the average value to the communication module.

These averages are calculated in the communication module for further averaging for the set period.

The base for the calculation is the range of 300 ppm CO.

There are two different averages:

4.1 Average value 1 (MW1) is calculated for a period of 20 minutes.

Example:

21.04.11 11.14 Zone1 MW1 239 ppm CO

4.2 Average value 2 (MW2) is calculated for a period of 8 hours.

Example:

21.04.11 11.14 Zone1 MW2 215 ppm CO