GfG Instrumentation

# Remote Control RC2

# Operation Manual




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## For your Safety

As with any piece of complex equipment, the GfG RC2 will do the job it is designed to do only if it is used and serviced in accordance with the manufacturer's instructions. Please protect yourself and your employees by following the instructions in this manual. All individuals who have or will have the responsibility for using and servicing this product must carefully read this manual. The warranties made by GfG with respect to the product are voided if functions or parameters are changed without the permission of GfG. They are also voided if the product is not used and serviced in accordance with the instructions in this manual. The above does not alter any statements by GfG regarding warranties, conditions of sale and/or delivery.

## Operational Hints

The remote control RC2 is connected to a GfG transmitter by a connection cable and is used for operating the transmitter or as a display. When connected to a GfG transmitter it provides a display and a keypad, the readout and the keypad functions of the remote control are identical with those of the GfG transmitter.

The remote control RC2 is approved for use in explosive areas and is subject to an EC-Type examination Certificate issued by DEKRA EXAM GmbH, according to directive 94/9/EG (ATEX 100a).

Certificate: BVS 04 ATEX E 212

Labeling: Ⓔx II 2G Ex ia IIC T4 Gb $-20°C \leq T_a \leq +50°C$

The remote control may be connected to or disconnected from the transmitter even in an explosive area.

| | |
|---|---|
|  | Do NOT replace the battery of the remote control in potentially explosive areas.<br><br>Only use 9V block batteries type DURACELL-PROCELL Alkaline, 6LR61 / MN1604, the plastic bottoms of which prevent the leaking of electrolyte. |

## General Description

The Remote Control RC2 is used for control or adjustment of the zeropoint and sensitivity when testing the transmitter.

Should the Series 28 transmitters be mounted in hard to access locations (i.e. close to the ceiling) you may, even in explosive areas, keep the cable procured permanently for connecting the remote control to the transmitter (maximum cable length is 10m / 33 feet). You can connect this cable to the remote control for display or service purposes.

| | |
|---|---|
|  | The maximum cable length between transmitter and remote control is 10m / 33 feet. Only use cables approved by GfG Instrumentation, Inc. |

The remote control RC2 is supplied with a helix cable for connection to GfG transmitters. On one end of the cable is plug A (see figure 1), which plugs into the socket on the transmitter. The other end of the cable is connected to the remote control and locked in place by slightly turning the sleeve ring of the plug (plug B).




Fig. 1

The On/Off switch for the remote is located at the top of the case near the plug connection.

When the unit is turned on, the green operational LED above the display is illuminated.

The keypad functions and the display of the remote control RC2 are absolutely identical with those of the transmitter.

## Operation

The function of the keypad in the different operational and special modes are described in detail in the operations manual of the relevant transmitter.

| | |
|---|---|
| ⚠ | For servicing a GfG transmitter without display, the remote control RC2 is required.<br><br>The remote control RC2 is allowed to be used in explosive areas. |




For connection to a GfG transmitter fix plug A (see figure 1, page 3) into the transmitter. If the plug is connected incorrectly, regardless of the transmitter polarity protection (nose at plug A), the display at the remote control drops out after a few seconds and will not function.

When the unit is turned on, the green operations LED must be on.

## Trouble shooting

If the operational LED does not light up, either replace the battery or check to ensure the battery is inserted correctly (check for correct polarity).

If the display of the remote control does not show a reading when it is connected to the transmitter, although the operational LED is on, either the connection is wrong (check plug) or one of the units, either the transmitter of remote control, is faulty.

## Replacement of battery

Remove the two Allen screws on the top then slide the top upward, being careful of the position of the loose insulating plate. Then slide the front part (with display and keypad) a slight amount upward and lift it off. The printed circuit board and the battery holder are affixed to the front part by means of short cables.



Do not replace the battery of the remote control in a potentially explosive area.

Use only 9V batteries type DURACELL-PROCELL Alkaline, 6LR61 / MN1604.

When replacing the 9V battery be cautious of the correct polarity (+ and – are indicated on the holder). After turning the unit on, the green operational LED lights up. If there is incorrect polarity of the battery, the unit cannot be turned on (the green LED does not light up).

## Signal Transmission

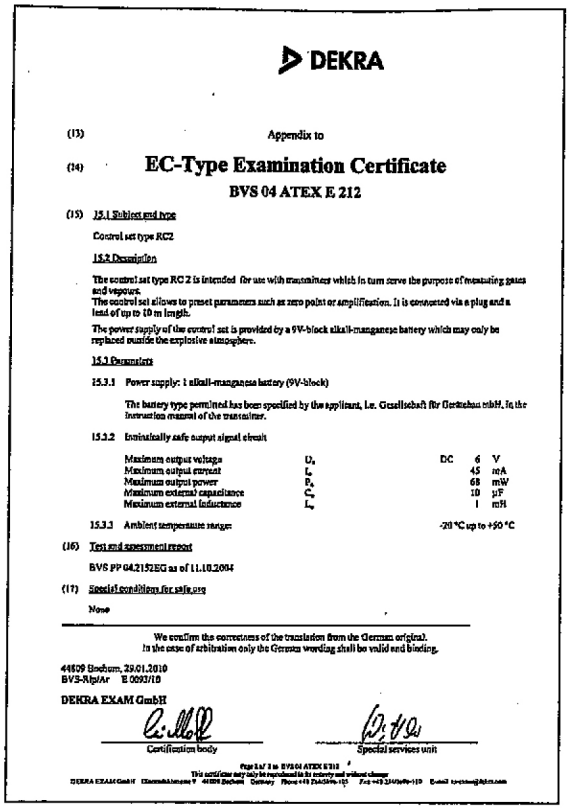
The signal from the transmitter to remote control is an intrinsically safe transmission. Both the transmitter and the cable of the remote control RC2 ensure the compliance of the following values:

| | | | | | |
|---|---|---|---|---|---|
| Maximum output voltage | $U_o$ | 6 V DC | Maximum output current | $I_o$ | 45 mA |
| Maximum output power | $P_o$ | 68 m W | Maximum output capacity | $C_o$ | 10 µF |
| Maximum output inductivity | $L_o$ | 1 mH | | | |

## Technical Data

| | |
|---|---|
| **Remote Control RC2** | |
| For connection to transmitter: | Series 28 transmitters |
| **Current Supply** | |
| Battery Type: | 9 V battery DURACELL-PROCELL Alkaline, 6LR61 / MN1604 |
| Climate Conditions | |
| Short-term storage temperature: | -25 to +60°C |
| Recommended storage temperature: | 0 to +30°C |
| Operational temperature (ambient): | -20 to +50°C |
| Humidity range: | 5 to 90% r.h. |
| Atmospheric pressure range: | 800 to 1100 hPa |
| Enclosure | |
| Casing material: | Compound, anti-static |
| Dimensions: | 60 x 120 x 35 mm / 2.4 x 4.7 x 1.4 inches (W x H x |
| Protection: | D) (H with plug: 180mm / 7 inches) |
| Cable connection to transmitter: | IP 54 |
| | Maximum cable length 10m / 33 feet |
| Approvals and Certifications | |
| Electromagnetic compatibility: | DIN EN 50270:2006 Type class I and Type class 2 |
| Labeling and Ignition protection: | ⟨Ex⟩ II 2G Ex ia IIC T4 Gb -20°C≤$T_a$≤+50°C |
| EC-Type Examination Certificate: | BVS 04 ATEX E 212 |
| Production monitoring: | CE 0158 (by notified body – DEKRA EXAM GmbH) |

## EC-Type Examination Certificate



DEKRA

(13) Appendix to

(14) **EC-Type Examination Certificate**
**BVS 04 ATEX E 212**

(15) 15.1 Subject and type

Control set type RC2

15.2 Description

The control set type RC 2 is intended for use with transmitters which in turn serve the purpose of measuring gases and vapours.
The control set allows to preset parameters such as zero point or amplification. It is connected via a plug and a lead of up to 10 m length.

The power supply of the control set is provided by a 9V-block alkali-manganese battery which may only be replaced outside the explosive atmosphere.

15.3 Parameters

15.3.1 Power supply: 1 alkali-manganese battery (9V-block)

The battery type permitted has been specified by the applicant, i.e. Gesellschaft für Gerätebau mbH, in the instruction manual of the transmitter.

15.3.2 Intrinsically safe output signal circuit

| | | | |
|---|---|---|---|
| Maximum output voltage | $U_o$ | DC 6 | V |
| Maximum output current | $I_o$ | 45 | mA |
| Maximum output power | $P_o$ | 68 | mW |
| Maximum external capacitance | $C_o$ | 10 | µF |
| Maximum external inductance | $L_o$ | 1 | mH |

15.3.3 Ambient temperature range: -20 °C up to +50 °C

(16) Test and assessment report

BVS PP 04.2152EG as of 11.10.2004

(17) Special conditions for safe use

None

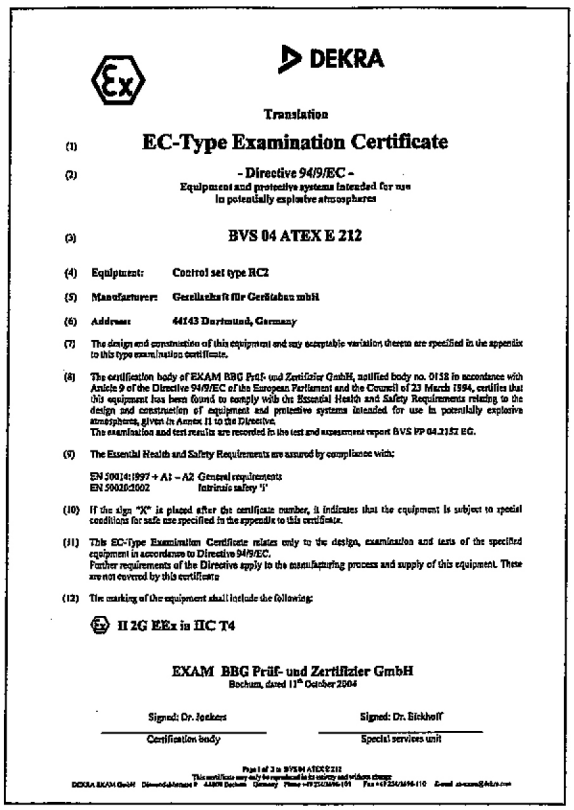
We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 29.01.2010
BVS-Kip/Ar E 0093/10

DEKRA EXAM GmbH

Certification body — Special services unit

Page 1 of 2 to BVS 04 ATEX E 212
This certificate may only be reproduced in its entirety and without change.
DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-101 Fax +49 234/3696-110 E-mail ex-exam@dekra.com



DEKRA

Translation

(1) **EC-Type Examination Certificate**

(2) **- Directive 94/9/EC -**
**Equipment and protective systems intended for use in potentially explosive atmospheres**

(3) **BVS 04 ATEX E 212**

(4) **Equipment:** Control set type RC2

(5) **Manufacturer:** Gesellschaft für Gerätebau mbH

(6) **Address:** 44143 Dortmund, Germany

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of EXAM BBG Prüf- und Zertifizier GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in the test and assessment report BVS PP 04.2152 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 50014:1997 + A1 – A2 General requirements
EN 50020:2002 Intrinsic safety 'i'

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

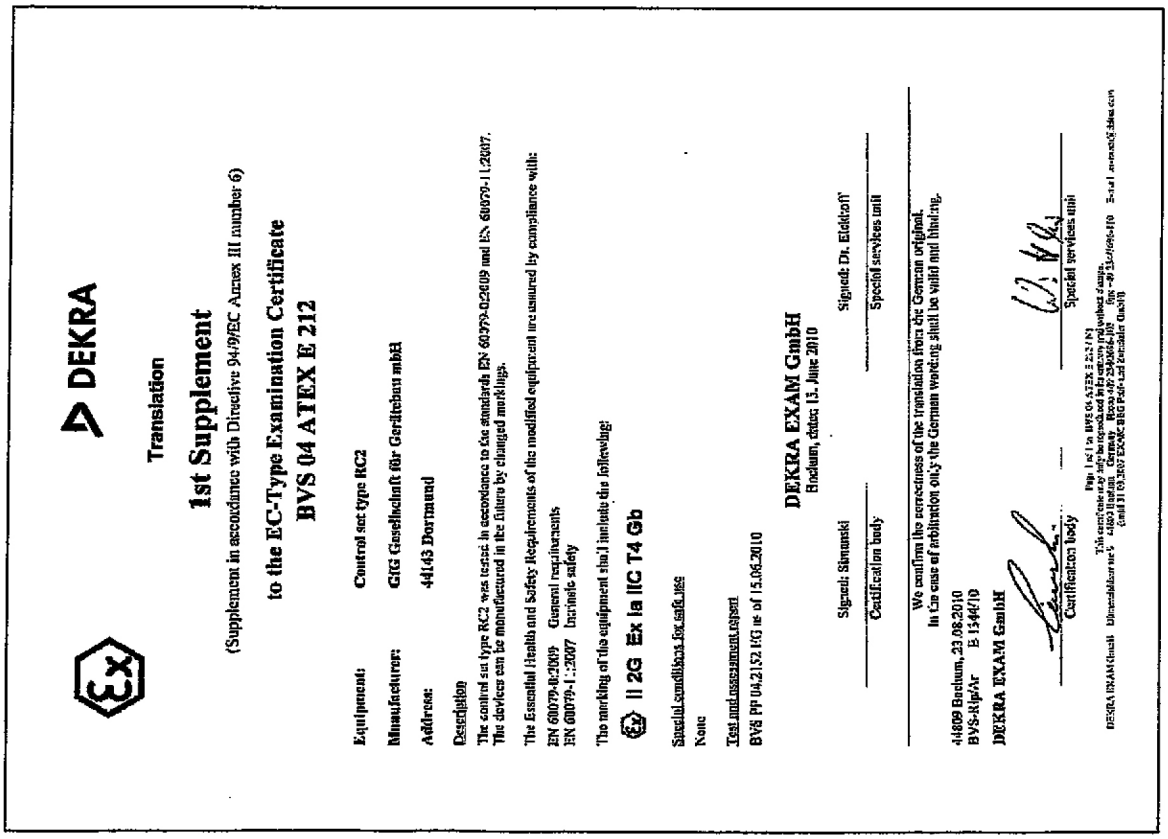
(12) The marking of the equipment shall include the following:

II 2G EEx ia IIC T4

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 11th October 2004

Signed: Dr. Jenkner — Certification body
Signed: Dr. Eickhoff — Special services unit

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DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-101 Fax +49 234/3696-110 E-mail ex-exam@dekra.com



DEKRA

Translation

**1st Supplement**
(Supplement in accordance with Directive 94/9/EC Annex III number 6)
**to the EC-Type Examination Certificate**
**BVS 04 ATEX E 212**

Equipment: Control set type RC2

Manufacturer: GfG Gesellschaft für Gerätebau mbH

Address: 44143 Dortmund

Description
The control set type RC2 was tested in accordance to the standards EN 60079-0:2009 and EN 60079-11:2007.
The devices can be manufactured in the future by changed markings.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:
EN 60079-0:2009 General requirements
EN 60079-11:2007 Intrinsic safety

The marking of the equipment shall include the following:

II 2G Ex ia IIC T4 Gb

Special conditions for safe use
None

Test and assessment report
BVS PP 04.2152 I/G as of 15.06.2010

DEKRA EXAM GmbH
Bochum, dated 15. June 2010

Signed: Sliwinski — Certification body
Signed: Dr. Eickhoff — Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 23.08.2010
BVS-Kip/Ar E 154/10

DEKRA EXAM GmbH

Certification body — Special services unit

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Gmbl 31.03.2005 EXAM BBG Prüf- und Zertifizier GmbH

# EC- Declaration of Conformity

## Remote Control
## RC2

**GfG Gesellschaft für Gerätebau mbH**
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Edited: 08.10.2004 Amended: 04.08.2010

GfG Gesellschaft für Gerätebau mbH develops, produces and sells gas sensors and gas warning devices, which are subject to a **quality management system** as per DIN EN ISO 9001.
Subject to supervision by means of a **quality system** -Certificate No. BVS 03 ATEX ZQS / E 187- issued by the notified body, DEKRA EXAM GmbH, is the production of electrical apparatus of instrumentation Group I and II, categories M1, M2, 1G and 2G for gas sensors, gas detectors, gas warning systems in ignition protection classes explosion- proof encasing, increased safety, encapsulation and intrinsical safety, as well as their measuring function.

The Remote Control **RC2** complies with **directive 94/9/EC** for devices and protective systems for proper use in explosion endangered areas (ATEX- directive) and with **council directive 2004/108/EC** for electromagnetic compatibility.

| | |
|---|---|
| **For electrical explosion protection** | BVS 04 ATEX E 212 |
| **Labelling** | ⟨Ex⟩ II **2G** Ex ia IIC T4 Gb |
| | CE 0158 |

The guidelines have been complied with under consideration of the standards mentioned below:

- **Electrical explosion protection**
  - Electrical apparatus for potentially explosive atmospheres. General requirements — EN 60079-0
  - Intrinsic safety „i" — EN 60079-11
- **Electromagnetic compatibility**
  - Electrical apparatus for the detection and measurement of combustible gases, toxic gases and oxygen. — EN 50270

The evaluation of the basic safety and health requirements has been done, documented and filed by a notified body with register no. 0158 ( DEKRA *EXAM* GmbH, Dinnerdahlstraße 9 D-44809 Bochum ).
The EMC testing laboratory EM TEST GmbH, Kamen has been charged with testing and evaluation of the electromagnetic compatibility.

Always adhere to the safety notes of the operation manual 206-000.23

Dortmund, 04.08.2010

.....
H.J. Hübner
President

ATEXEG-Konf07/Steinert

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GfG Instrumentation
Worldwide Manufacturer of Gas Detection Solutions

7004-RC2 Rev. 1 (05/13/14)