



(1) EC-TYPE-EXAMINATION CERTIFICATE (Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**



(3) EC-type-examination Certificate Number:

PTB 00 ATEX 3117

(4) Equipment: Control unit of types GHG 41..... R.... and GHG 43.....

(5) Manufacturer: CEAG Sicherheitstechnik GmbH

(6) Address: Neuer Weg Nord 49, D-69412 Eberbach

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC 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 confidential report PTB Ex 00-30073.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50 014:1997 EN 50 018:1994 EN 50 019:1994 EN 50 020:1994

(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 schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.


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

 **II 2 G EEx e II T6 , EEx e ib IIC T6 , EEx ed IIC T6 or EEx ed ib IIC T6**

Zertifizierungsstelle Explosionsschutz

Braunschweig, September 19, 2000

By order:


Dr.-Ing. U. Engel
Regierungsdirektor



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3117**

(15) Description of equipment

Control units of type GHG 41. R.... consist of the bottom part and the cover with separately approved internal sealing device and they are made of polyamide or of light or non-ferrous heavy metal. Designs of one, two or three units are available. Rail-type webs or top-hat rails intended to take up parts to be built in have been grooved (plastic enclosure) or riveted (metal enclosure) into the bottom of the enclosure. The assembly of control units is possible.

Control units of type GHG 43. R.... consist of the bottom part and the cover with separately approved internal sealing device. They are made of polyamide or of light or non-ferrous heavy metal. Designs of two or four units are available. If an enclosure of this type is made of materials with a surface resistance $\geq 1 \text{ G}\Omega$, it is provided with a warning label.

Attached Ex cable entries are covered by a separate EC-type-examination certificate. Metallic Ex cable entries are incorporated in the grounding system through a metal plate.

Both variants are suitable for permanent installation. If required, components covered by separate EC-type-examination certificates, e.g. pushbuttons, signal lamps, measuring instruments and/or terminals, are built in. Enclosures with two, three or four units can exclusively be used for the installation of terminal blocks of the type of protection increased safety "e" covered by separate EC-type-examination certificates.

The identification with the symbols of the types of protection is to be adapted to the components actually installed.

Identification for the types of protection

fitted with moving-iron ammeter and/or terminals	EEx e II T6
fitted with moving-iron ammeter, terminals / signal lamp / pushbutton	EEx ed IIC T6
fitted with moving-coil ammeter and terminals, if necessary	EEx e ib IIC T6
fitted with moving-coil ammeter, terminals / signal lamp / pushbutton	EEx edib IIC T6

Technical data

Rated voltage:	max. 750 V
Rated current:	max. 16 A
Rated cross-sectional area:	max. 2 x 2,5 mm ² per clamping point
Ambient temperature range, normal:	-20 °C \leq T _{amb} \leq +40 °C
Ambient temperature range, extended:	-55 °C \leq T _{amb} \leq +55 °C
Protection against contact, foreign matter and water:	mind. IP 54 nach EN 60 529: 1991

The electrical data for the built-in components can be gathered from the respective certificates.

When terminals are installed, the following applies:

Rated voltage: max. 750 V (depending on range of working voltage of terminals used)

Rated current, number and cross-section of conductors for type:

GHG 43; size 100 x 245 x 90	supplementary sheet 1
GHG 43; size 100 x 160 x 90	supplementary sheet 2
GHG 41; size 85 x 165 x 78	supplementary sheet 3
GHG 41; size 85 x 125 x 78	supplementary sheet 4

Notes

The control units are suitable for an ambient temperature range from $-20\text{ }^{\circ}\text{C}$ to $+40\text{ }^{\circ}\text{C}$. Suitability for other ambient temperature ranges is made evident by special marking. Only such separately approved sealing devices and built-in and built-on components – covered by a separate EC-type-examination certificate – have been used, which are suitable for these temperatures. Additional hints of the manufacturer must be observed.

The manufacturer's note: "Avoid electrostatic charging. Clean with damp cloth only" must be observed.

(16) Test report PTB Ex 00-30073

(17) Special conditions for safe use

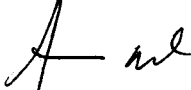
not applicable

(18) Essential health and safety requirements

The type of protection – at least IP 54 – is reached only if the tested sealing devices, cable entries and sealing plugs are properly used.

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Engel
Regierungsdirektor



Braunschweig, September 19, 2000

1st SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3117

(Translation)

Equipment: Control units, types GHG 41.... R.... and GHG 43.... R....

Marking:  II 2 G EEx e II T6, EEx e ib IIC T6, EEx ed IIC T6 and EEx ed ib IIC T6

Manufacturer: CEAG Sicherheitstechnik GmbH

Address: Neuer Weg Nord 49
69412 Eberbach, Germany

Description of supplements and modifications

There are two additional enclosure sizes for type GHG 413 8... R.... of control units GHG 41..... R.... and GHG 43..... R.... .

Technical data

Rated voltage:* up to 750 V
Rated current:* max. 35 A

*) depending on terminal and the explosion-proof components used

The ratings specified are maximum values, actual values will be subject to the electrical equipment used from case to case. Depending on the system conditions, the mode of operation, the utilisation category, etc., the manufacturer will define the definitive ratings which will be within the range of these limiting values and will comply with the relevant standards.

Test report: PTB Ex 01-11189

Notes for installation and use

The maximum number of conductors for each housing size, which depends on the cross section and the permissible continuous current, is specified in the attached documentation sheets.

Zertifizierungsstelle Explosionsschutz

Braunschweig, August 27, 2001

By order


Dr.-Ing. U. Klausmeyer
Regierungsdirektor



Sheet 1/1

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.


2nd SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3117

(Translation)

Equipment: Control units, types GHG 41.... R.... and GHG 43.... R....

Marking:  II 2 G EEx e II T6, EEx e ib IIC T6, EEx ed IIC T6 and EEx ed ib IIC T6

Manufacturer: CEAG Sicherheitstechnik GmbH

Address: Neuer Weg Nord 49
69412 Eberbach, Germany

Description of supplements and modifications

The type GHG 411.... R.... of the control units types GHG 41..... R.... and GHG 43..... R.... may now also be used in areas that have to be expected to be occasionally exposed to potentially explosive atmospheres with dust/air mixtures.

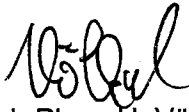
The marking, therefore, changes to

 II 2 G/D EEx e II T6, EEx e ib IIC T6, EEx ed IIC T6 oder EEx ed ib IIC T6
IP 66 T 48 °C

Test report: PTB Ex 01-11218

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, October 1, 2001


Dipl.-Phys. U. Völkel



3rd SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3117

(Translation)

Equipment: Control units, types GHG 41.... R.... and GHG 43.... R....

Marking:  II 2 G/D EEx e II T6, EEx e ib IIC T6, EEx ed IIC T6
or EEx ed ib IIC T6 IP 66 T 48 °C

Manufacturer: CEAG Sicherheitstechnik GmbH

Address: Neuer Weg Nord 49
D-69412 Eberbach, Germany

Description of supplements and modifications

The control unit of type GHG 41. R.... comes with an additional type GHG 414 R.... , which has an enclosure made from V4A sheet metal and can be fitted with – separately certified – terminals for non-intrinsically safe and intrinsically safe circuits, as well as – separately certified – command and display components.

This type is used for

 II 2 G EEx e II T6, EEx e ib IIC T6, EEx ed IIC T6, EEx ed ib IIC T6
application (no dust).

The technical data are not affected by the modifications.

Ambient temperature range -55 °C to +55 °C

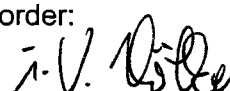
Notes for manufacture and operation

When fitting the unit with terminals, reference shall for the maximum number of conductors for each enclosure size (which is subject to the cross section and the permissible continuous current) be made to the attached data sheets.

Test report: PTB Ex 02-11316

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Klausmeyer
Regierungsdirektor



Braunschweig, February 07, 2002

Sheet 1/1

4. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3117

(Translation)

Equipment: Control unit, types GHG 41.... R.... and GHG 43.... R....

Marking:  II 2 G/D EEx e II T6, EEx e ib IIC T6, EEx ed IIC T6
or EEx ed ib IIC T6 IP 66 T 48 °C

Manufacturer: CEAG Sicherheitstechnik GmbH

Address: Neuer Weg Nord 49
69412 Eberbach, Germany

Description of supplements and modifications

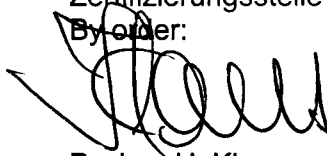
Additional standard applied: EN 50281-1-1:1998

The type GHG 43.... R.... of the control units types GHG 41..... R.... and GHG 43..... R.... may now also be used in areas that have to be expected to be occasionally exposed to potentially explosive atmospheres with dust/air mixtures.

Test report: PTB Ex 03-13361

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Klausmeyer
Regierungsdirektor



Braunschweig, October 22, 2003


5th SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3117

(Translation)

Equipment: Control unit, types GHG 41.... R.... and GHG 43.... R....

Marking:  II 2 G/D EEx e II T6, EEx e ib IIC T6, EEx ed IIC T6
or EEx ed ib IIC T6 IP 66 T 48 °C

Manufacturer: Cooper Crouse-Hinds GmbH

Address: Neuer Weg Nord 49, 69412 Eberbach, Germany

Description of supplements and modifications

The control unit, types GHG 41.... R.... and GHG 43.... R...., will be supplemented to include the following:

- 1) The control unit may optionally be provided with an outside earth connection.
- 2) The control unit may optionally be provided with a measuring instrument adapter M45. The minimum ambient temperature is in that case reduced to – 40 °C.
- 3) The control unit may also accommodate – separately certified – measuring instruments designed to Encapsulation “m” type of protection.
- 4) The control unit may also be provided with rotary switch attachments with a larger grip.
- 5) The control unit may also be provided with an internal M20x1.5 twin brass nut. The protective earthing conductor connected to the twin nut will include metal entries in the PE or PA circuit. The nut must not be used as a counter nut.
- 6) The control unit may optionally be provided with the – separately certified – type Ex 23 GHG 23 . . . R control switch, including the – separately certified – type Ex 23 - GHG 41915 R0001 attachment. The surface temperature permitted as a maximum for potentially dust explosive areas is raised to 53 °C.
- 7) The control unit may optionally be provided with the – separately certified – type Ex 23 GHG 23 . . . R control switch, including the – separately certified – type 8602/ attachment. The surface temperature permitted as a maximum for potentially dust explosive areas is raised to 53 °C.
- 8) The control unit may optionally be provided with the type GHG 410 6666 P0001 blanking plug made from Vestamid.

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

5th SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3117

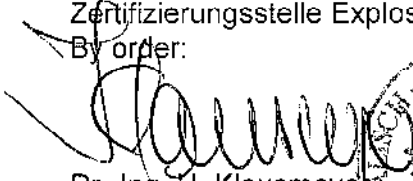
Because of the above supplements, the marking is changed to read:

 II 2 G/D EEx em II T6, EEx em ib IIC T6, EEx edm IIC T6 or EEx edm ib IIC T6
IP 66 T 48 °C or T 53 °C

Test report: PTB Ex 04-14135

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Klausmeyer
Regierungsdirektor



Braunschweig, November 11, 2004