



## (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 97 ATEX 1081 U**



(4) Component: built-in pushbutton type GHG 41. ....R....

(5) Manufacturer: CEAG Sicherheitstechnik GmbH

(6) Address: D-69412 Eberbach

(7) This component 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 component 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 97-17125.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 50014:1997**

**EN 50018:1994**

**EN 50019:1994**

(10) The sign "U" placed behind the certificate number indicates that this certificate should not be confounded with certificates issued for equipment or protective systems. This Component Certificate only serves as a basis for the issuing of certificates for equipment or protective systems.

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

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



**II 2 G EEx de IIC IM 2 EEx de I**

Zertifizierungsstelle Explosionsschutz

Braunschweig, December 2, 1997

By order:

(signature)

Dr.-Ing. U. Klausmeyer  
Oberregierungsrat

**3 pages, correct and complete as regards content.**

By order:

Dr.-Ing. Klausmeyer, Braunschweig, August 31, 1998  
Oberregierungsrat



sheet 1/3

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.

## SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE No. PTB 97 ATEX 1081 U**

(15) Description of component

The built-in pushbutton of type GHG 41. ....R.... serves as a switching, control or signalling device. Electromechanical or electronic components such as switching contacts, diodes, resistors, potentiometers, fuses or the like are installed in the flameproof enclosure. Connection is through integrated terminals.

Rated insulation voltage .....	up to	500 V
Rated voltage $U_e$ .....	up to	400 V      400 V
Rated current $I_e$ .....	max.	16 A      4 A
related to utilization category .....		AC-1      AC-11

In accordance with the relevant provisions, rated values other than those stated above are permissible if the making and breaking capacity is complied with; they have been specified by the manufacturer as a function of the mode of operation, utilization category, etc.

Contacts provided .....	two-pole, make and/or break contact
Power loss .....	max. 1 W
Rated cross-section area .....	max. 2,5 mm <sup>2</sup>
Ambient temperature .....	up to - 55 °C to 50 °C

The built-in pushbutton has been designed for thermal stability between -55 °C and 80 °C and can be used in ranges of temperature class T6.

(16) Report PTB Ex 97-17125

comprising description (6 sheets), drawing and test record (15 sheets).

(17) Special conditions for safe use

The pushbutton is to be installed in an enclosure which complies with the requirements of a recognized type of protection according to EN 50 014, section 1.2.

If the pushbutton is installed in an enclosure of the type of protection *increased safety "e"* according to EN 50 019, the creepage distances and clearances according to section 4.3, section 4.4 and Table must be complied with.

The component may be used in groups I and II as the requirements of the standard are identical in this case.

## Routine test

The routine test according to EN 50 018, section 16.1.1, need not be carried out as a type test with four times the reference pressure according to section 16.2 was passed.

Compliance with the maximum permissible temperature of the respective temperature class, taking the maximum ambient temperature into account, is to be guaranteed by a routine test according to EN 50 014, section 23.4.6.1, and by the specifications in the test documents.

## (18) Essential health and safety requirements

not applicable

Zertifizierungsstelle Explosionsschutz  
By order:

Braunschweig, December 2, 1997

(signature)

Dr.-Ing. U. Klausmeyer  
Oberregierungsrat

**1st SUPPLEMENT**  
according to Directive 94/9/EC Annex III.6  
**to EC-TYPE-EXAMINATION CERTIFICATE PTB 97 ATEX 1081 U**  
**(Translation)**

Equipment: Pushbutton, type GHG 41. ....R....

Marking:  **II 2 G Ex de ia/ib [ia/ib] IIC and I M 2 Ex de ia/ib [ia/ib] I**

Manufacturer: Cooper Crouse-Hinds GmbH previously: CEAG Sicherheitstechnik GmbH

Address: Neuer Weg-Nord 49  
69412 Eberbach, Germany

Description of supplements and modifications

The pushbutton, type GHG 41. ....R...., may in future also be manufactured with the following modifications:

- The pushbutton is in conformity with the requirements of EN 60079-0 et seq. and will be marked as follows:

**Ex de IIC or Ex de I**

- The pushbutton will also accommodate separately certified intrinsically safe operators. The protection symbol will then be extended to:

**Ex de [ia/ib] IIC or Ex de [ia/ib] I**

- The pushbutton will also be connected with separately certified intrinsically safe operators. The protection symbol will then be extended to:

**Ex de ia/ib IIC or Ex de ia/ib I**

- The rated conductor size is extended to 4mm<sup>2</sup> as a maximum.
- The pushbutton will also be manufactured as a 4-pole contact unit.

Rated current	Rated conductor size	Ambient temperature
max. 14 A	2.5 mm <sup>2</sup>	40 °C
max. 16 A	4 mm <sup>2</sup>	40 °C
max. 12 A	2.5 mm <sup>2</sup>	50 °C
max. 15 A	4 mm <sup>2</sup>	50 °C

- The pushbutton may also be used at a higher ambient temperature, provided the electrical data are reduced.

Rated operating voltage .....	up to	24 V	24 V
Rated current $I_e$ .....	max.	2 A	2 A
Utilization category.....		DC-1	AC-11

Provided the making and breaking capacities are met, rated values other than those specified above are acceptable and will be defined by the manufacturer on the basis of the operating mode, utilization category, etc.

Ambient temperature .....	up to	75 °C
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## Applied standards

EN 60079-0:2004	EN 60079-1:2004	EN 60079-7:2003	EN 60079-11:2007
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Test report: PTB Ex 07-17126

## Notes for manufacturing and operation

The pushbutton has to be mounted in the enclosure so that the clearance and creepage distances specified in EN 60079-11 1 between intrinsically safe and non-intrinsically safe circuits are complied with.

If system installation and layout does not provide for the clearance requirements for connectors as specified in EN 60079-11, wiring that meets the quality criteria Increased Safety "e" has to be used, or the wiring has to be mechanically fail-safe as specified in EN 60079-11.

Should these clearance requirements not be met, local wiring work may be performed only if an explosion risk can be positively excluded along all the lines.

When connecting more than one intrinsically safe circuit, the rules and regulations for interconnection must be observed.

Zertifizierungsstelle Explosionsschutz

Braunschweig, July 9, 2007

By order:

Dr.-Ing. M. Thedens  
Oberregleringenieur



# Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

## Telefax

(Bitte sofort weiterleiten!  
Please pass on immediately!)

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An/To: Cooper Crouse-Hinds GmbH  
Neuer Weg-Nord 49  
69412 Eberbach, Deutschland

**Attention: Frau Frankhauser**

Telefax-Nr. 06271/806-521

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Von/From: Physikalisch-Technische Bundesanstalt,  
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**Einbaudrucktaster GHG41.**  
**EG-Baumusterprüfbescheinigung PTB 97 ATEX 1081 U**  
**Ihr Schreiben vom 03.03.2008**

**Buit-in pushbutton type GHG 41.**  
**EC-Type-Examination certificate PTB 97 ATEX 1081 U**  
**Your letter from 03.03.2008**

Sehr geehrte Frau Frankhauser,  
Dear Mrs Frankhauser,

seitens der PTB bestehen keine sicherheitstechnischen Bedenken gegen den zukünftigen Einsatz des Materials Ultramid C3U.  
on the part of PTB there are no safety-relevant objections against the future use of the material Ultramid C3U

Es wird empfohlen, eine Kopie dieses Fax jedem betroffenen Betriebsmittel beizufügen.  
It is recommended to add a copy of this fax to each affected equipment.

Mit freundlichen Grüßen

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Datum/Date: 09.05.08

Im Auftrag/By order

