



## (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 98 ATEX 1054 U**



(4) Component: empty enclosure type GHG 6... ..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 98-18088.

(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

(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:



**EEx de II C or EEx d IIC II 2G**

Zertifizierungsstelle Explosionsschutz

By order:

Dr.-Ing. U. Klausmeyer  
Oberregierungsrat



Braunschweig, 28.07.1998

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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 98 ATEX 1054 U**

(15) Description of component

The empty enclosure type GHG 6... R.... of the type of protection Flameproof Enclosure is made of sheet-steel, aluminium cast or CuNi alloy, alternatively with operator buttons and/or viewing windows.

It is connected via direct cable entries or terminal boxes in the type of protection Increased Safety according to a separate test certificate.

### Electrical data

Rated voltage ..... up to                    275 V        750 V        6600 V  
Rated cross section                    max.                    300 mm<sup>2</sup>

| Enclosure type | Dissipation power |       |
|----------------|-------------------|-------|
|                | T5                | T6    |
| GHG 6.1. R.... | 120 W             | 80 W  |
| GHG 6.2. R.... | 210 W             | 150 W |
| GHG 6.4. R.... | 280 W             | 210 W |
| GHG 6.5. R.... | 420 W             | 300 W |
| GHG 6.7. R.... | 575 W             | 400 W |
| GHG 676. R.... | 975 W             | 700 W |
| GHG 678. R.... | 1350 W            | 975 W |

(16) Report PTB Ex 98-18088 (4 sheets), description with annex (13 sheets), 23 drawings

(17) Special conditions for safe use

The enclosure may be connected via suitable direct cable entries which meet the requirements of EN 50 018 sections 12.1 and 12.2 and for which a separate test certificate is available.

Unused openings shall be sealed in accordance with EN 50 018, section 12.5.

Cable entries as well as sealing plugs of simple construction must not be used.

These regulations shall be enclosed with the apparatus in an appropriate form.

### Routine test

The routine test according to EN 50 018, section 16.1.1, paragraph 1 shall be carried out at a relative static pressure of  
15 bar.

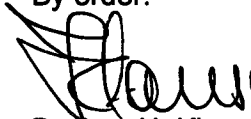
### (18) Essential health and safety requirements

Met by compliance with the standards mentioned above.

Zertifizierungsstelle Explosionsschutz

Braunschweig, 28.07.1998

By order:



Dr.-Ing. U. Klausmeyer  
Oberregierungsrat




## 1st SUPPLEMENT

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

### to EC-TYPE-EXAMINATION CERTIFICATE PTB 98 ATEX 1054 U (Translation)

Component: Empty enclosure, type GHG 6.. ....R....

Marking:  II 2 G Ex de IIC or Ex d IIC  
II 2 D Ex tD A21 IP 66 T 80 °C or 95 °C

Manufacturer: Cooper Crouse-Hinds GmbH    previously CEAG Sicherheitstechnik GmbH

Address:        Neuer Weg-Nord 49  
                    69412 Eberbach, Germany

#### Description of supplements and modifications

The empty enclosure, type GHG 6.. ....R.... , may be manufactured with the following modifications:

1. If equipped with seals, the empty enclosure is suited for use in a "dust" hazardous area.
2. The empty enclosure, type GHG6.5 5...R.... , can have a tapped hole up to M270 x 1.5 in its baseplate, which may be used to fit equipment covered by their own examination certificates. Flanged equipment has retainers to prevent loosening and torsion, and does not increase the inside volume.
3. Cable entries or bushings (with M60 x 1.5 or M60 x 2 screw thread) certified by separate examination certificates may be fitted into the empty enclosure.
4. Equivalent terminal boxes certified by a separate examination certificate may be attached to the empty enclosure, provided the type of protection is observed.
5. The empty enclosure may be closed with M36 x 1.5 screw plugs. These plugs have to be mechanically locked to provide a permanent connection preventing accidental loosening.
6. The empty enclosure may with reduced power loss be employed up to ambient temperatures of 55 °C.

| Type of enclosure | Power loss                  |       |                             |
|-------------------|-----------------------------|-------|-----------------------------|
|                   | T <sub>amp</sub> up to 40°C |       | T <sub>amp</sub> up to 55°C |
|                   | T6                          | T5    | T5                          |
| GHG 6.1 ....R.... | 120 W                       | 80 W  | 80 W                        |
| GHG 6.2 ....R.... | 210 W                       | 150 W | 150 W                       |
| GHG 6.4 ....R.... | 280 W                       | 210 W | 210 W                       |
| GHG 6.5 ....R.... | 420 W                       | 300 W | 300 W                       |
| GHG 6.7 ....R.... | 575 W                       | 400 W | 400 W                       |
| GHG 676 ....R.... | 975 W                       | 700 W | 700 W                       |
| GHG 678....R....  | 1350 W                      | 975 W | 975 W                       |

Applied standards

EN 60079-0: 2004  
EN 60241-1-1: 1998

EN 60079-1:2004

EN 60079-7: 2004

Test report: PTB Ex 06-16066

Special conditions

It is only allowed to repair a flameproof joint according the constructive dimensions given by the original manufacturer. A repair according the values in tables 1 or 2 of EN 60079-1 is not permissible.

Zertifizierungsstelle Explosionsschutz  
By order:

Braunschweig, December 8, 2006

  
Dr.-Ing. M. Theodens  
Regierungsrat



## 2nd SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 98 ATEX 1054 U

(Translation)

Equipment: Empty enclosure, type GHG 6.. ....R....


Marking:  **II 2 G Ex de IIC and Ex d IIC**  
**II 2 D Ex tD A21 IP 66**

Manufacturer: COOPER Crouse-Hinds GmbH

Address: Neuer Weg Nord 49, 69412 Eberbach, Germany

### Description of supplements and modifications

- 1) The empty enclosure, GHG 6.. ... R...., is modified with the following additions:
- 2) The minimum ambient temperature is reduced to -55 °C. At temperatures between -20 °C and -55 °C, the empty enclosure can only be used in gas group IIB.
- 3) The maximum ambient temperature is increased to +60 °C. At temperatures between +55 °C and +60 °C, the empty enclosure can only be used in gas group IIB.
- 4) A fan may be installed in the empty enclosure.
- 5) The marking will now be:

 **II 2 G Ex de IIC, IIB and Ex d IIC, IIB**

 **II 2 D Ex tD A21 IP 66**

### Technical data

| Enclosure        | Dimensions (mm) |
|------------------|-----------------|
| GHG 6.1... R.... | 210x210x180     |
| GHG 6.2... R.... | 320x320x180     |
| GHG 6.4... R.... | 320x320x300     |
| GHG 6.5... R.... | 430x430x300     |
| GHG 6.7... R.... | 430x650x320     |
| GHG 676...R....  | 650x650x480     |

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Braunschweig und Berlin

## 2. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 98 ATEX 1054 U

Ambient temperatures..... subject to the test pressure of the static  
..... overpressure test and the gas group  
..... -55 °C to +60 °C

Protection according to EN 60529 ..... IP66

The composition of the protection symbol depends on the types of protection of the components actually used.

### List of actuating elements and accessories

| Particulars  | Code for ordering  |
|--|--------------------|
| Threaded sleeve (M42x1.5 6g) for plug in bushing (Ø36 H6)                        | GHG 660 1916 R0001 |
| Threaded flameproof bushing/threaded flameproof fastener M36 (separate approval) | GHG 660 1916 R0002 |
| Threaded sleeve for plug in bushing  | GHG 660 1916 R0003 |
| Threaded flameproof fastener (M36x1.5 6g)  | GHG 660 1916 R0004 |
| Cable bushing - threaded (separate approval)                                     | GHG 660 1916 R0005 |
| Window Ø 90 mm   | GHG 660 1916 R0006 |
| Window Ø 175 mm  | GHG 660 1916 R0007 |
| Tappet bushing   | GHG 660 1916 R0008 |
| Switch axis bushing  | GHG 660 1916 R0009 |
| Flameproof fastener for switch axis  | GHG 660 1916 R0010 |
| Ex-d cable entry (separate approval)   | GHG 660 1916 R0011 |
| Ex-d cable bushing up to 6 kV (sep. approval)                                    | GHG 660 1916 R0012 |
| Ex-d cable glands up to 630 A (separate approval)                                | GHG 660 1916 R0013 |
| Cable glands (separate approval)   | GHG 660 1916 R0014 |
| Central drive for switch axis  | GHG 660 1916 R0015 |
| Switch axis Ø 15mm   | GHG 660 1916 R0016 |
| Ex-d PE – connection (M8x1.25, M12x1.75, M16x2 H6/6g)                            | GHG 660 1916 R0017 |
| Ex-d bushings (from M14x1.5 - M60x2 H6/6g) (separate approval)                   | GHG 660 1916 R0018 |

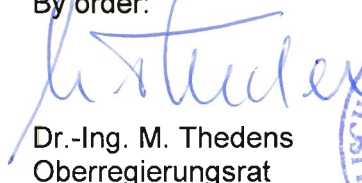
### Applied standards

EN 60079-0:2006, EN 60079-1:2007, EN 60079-7:2007, EN 61241-0:2006, EN 61241-1:2004

Assessment and test report: PTB Ex 09-19259

Zertifizierungssektor Explosionsschutz

By order:

  
Dr.-Ing. M. Thedens  
Oberregierungsrat



Braunschweig, January 8, 2010

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