Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(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

(13) # SCHEDULE

(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 seperate test certificate.

Electrical data

Rated voltage ..... up to 275 V 750 V 6600 V

Rated cross section max. 300 mm²

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 seperate 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
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Dr.-Ing. U. Klausmeyer
Oberregierungsrat

Braunschweig, 28.07.1998

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

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.

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1st SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 98 ATEX 1054 U

Type of enclosure	Power loss		
	T_{amp} up to 40°C		T_{amp} 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 60079-1:2004** **EN 60079-7: 2004**
EN 60241-1-1: 1998

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:

Dr.-Ing. M. Thedens
Regierungsrat

Braunschweig, December 8, 2006

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

2nd S U P P L E M E N T

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

Normal.dot

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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:

Braunschweig, January 8, 2010

Dr.-Ing. M. Thedens
Oberregierungsrat

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