



## (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 08 ATEX 1042 U**



(4) Component: Ex-d empty enclosure, type GHG 64.. ... R....

(5) Manufacturer: Cooper Crouse-Hinds GmbH

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

(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 08-14217.

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

**EN 60079-0:2006**

**EN 60079-1:2004**

**EN 60079-7:2007**

(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, examination and tests of the specified component in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.

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

**II 2 G Ex d e IIB, IIB + H2**

Zertifizierungsstelle Explosionsschutz

By order:

Braunschweig, June 12, 2008

Dipl.-Phys. U. Völkel



(13)

## SCHEDULE

(14)

### EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 1042 U

(15) Description of component

The Ex-d empty enclosure, type GHG 64.. ... R...., designed to Flameproof Enclosure "d" type of protection, is an aluminium casting and consists of a bottom section with flat cover.

#### Technical data

##### Enclosure size

Enclosure	Size	Height	Width	Depth
GHG 64. 10.. R....	10	210	210	160
GHG 64. 11.. R....	11	210	320	160
GHG 64. 12.. R....	12	210	320	255
GHG 64. 13.. R....	13	320	320	160
GHG 64. 14.. R....	14	320	320	255

Ambient temperature range ..... -55 °C to +55 °C  
..... (depending on the test pressure of the static  
..... overpressure test)

Protection according to EN 60529 ..... IP54

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

(16) Test report PTB Ex 08-14217

(17) Special conditions for safe use

Components attached or installed (terminal compartments, bushings, Ex-type cables and cable entry fittings, connectors) have to be of a technical standard that complies with the specifications on the cover sheet as a minimum, and they must be covered by a separate examination certificate. The operating conditions specified in the component certificates must be followed by all means, and the operating company must be adequately informed with the operating instructions. Fitness-for-use assessment of the components used must be documented in a consistent manner as specified in the QM system.

The empty enclosures may also be connected by means of suitable cable entry fittings or conduit systems, which meet the requirements of 60079-1:2006, sections 13.1 and 13.2, and for which a separate examination certificate has been issued.



Should the empty enclosure be connected by means of a conduit entry fitting which has been approved for this purpose, the required sealing device must be provided immediately at the enclosure.

Cable entry fittings and sealing plugs of a simple design must not be used.

Any openings that are not used must be closed as specified in 60079-1:2006, section 11.

The screw plugs in the cover must be tightened with a torque of 30 Nm.

Flameproof joint repair and overhaul must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in table 2 of EN 60079-1.

For repair of separately certified components, due regard must be given to the EC Type Examination Certificates of these components.

(18) Essential health and safety requirements

Met by compliance with the afore-mentioned Standards.

Zertifizierungsstelle Explosionsschutz

Braunschweig, June 12, 2008

By order:

  
Dipl.-Phys. U. Völkel



## 1st SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 1042 U

(Translation)

Equipment: Ex-d empty enclosure, type GHG 64.. .. R....

Marking:  II 2 G Ex d e IIB, IIB+H2

Manufacturer: Cooper Crouse-Hinds GmbH

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

### Description of supplements and modifications

The EX-d empty enclosure, GHG 64.. .. R...., is modified with the following additions:

1) The Ex-d empty enclosure may also be employed in areas in which a potentially explosive atmosphere as a mixture of dust and air can occasionally form.

The marking therefore changes to:

 II 2 G Ex d IIB, IIB + H<sub>2</sub> oder  II 2 G Ex de IIB, IIB + H<sub>2</sub>

 II 2 D Ex tD A21 IP66

2) Enclosure sizes 15, 16, 17, 18, 19 and 20 are accepted as additional sizes.  
Enclosure size 20 can only be used in gas group IIB.

3) Separately certified terminal boxes may optionally be flange-connected with the enclosure.

4) The actuator elements and accessory parts that are listed below may be used.

### Technical data

#### Enclosure sizes

Enclosure	Size	Height	Width	Depth
GHG 64. 10.. R....	10	210	210	160
GHG 64. 11.. R....	11	210	320	160
GHG 64. 12.. R....	12	210	320	255
GHG 64. 13.. R....	13	320	320	160
GHG 64. 14.. R....	14	320	320	255
GHG 64. 15.. R....	15	320	430	191

GHG 64. 16.. R....	16	320	430	284
GHG 64. 17.. R....	17	430	430	284
GHG 64. 18.. R....	18	430	650	284
GHG 64. 19.. R....	19	430	650	437
GHG 64. 20.. R....	20	650	650	442

Ambient temperatures -55 °C to +55 °C and -20 °C to +55 °C  
(subject to the test pressure of the static overpressure test and the gas group)

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 actuator elements and accessories

Particulars	Code for ordering
Threaded sleeve for plug-in bushing	GHG 660 1916 R0001
Flameproof bushing/flameproof fastener - M36 thread / plug type	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	GHG 660 1916 R0005
Window Ø 90mm	GHG 660 1916 R0006
Tappet bushing	GHG 660 1916 R0008
Threaded flameproof bushing/threaded flameproof fastener	GHG 660 1916 R0020
Window max. 180x140mm	GHG 660 1916 R0021
Plug-type flameproof bushing/flameproof fastener	GHG 660 1916 R0022
Operating handle, complete - sheet 1	GHG 660 1916 R0023
Coupling bushes IIB and IIB+H2	GHG 660 1916 R0024
Actuator element - switch SG-EX22-AD	GHG 660 1916 R0025
Actuator element - slam button SG-EX22-BEY	GHG 660 1916 R0026
Actuator element - slam button SG-EX22-BEG	GHG 660 1916 R0027
Actuator element - slam button SG-EX22-BEMO	GHG 660 1916 R0028
Actuator element - slam button SG-EX22-BETR	GHG 660 1916 R0029
Actuator element - pushbutton SG-EX22-BI	GHG 660 1916 R0030
Actuator element - key-operated pushbutton SG-EX22-BY	GHG 660 1916 R0031
Actuator element - potentiometer switch adapter SG-EX22-BPCO	GHG 660 1916 R0032
Actuator element - potentiometer switch adapter SG-EX22-BPMV	GHG 660 1916 R0033
Actuator element - pushbutton SG-EX22-BR	GHG 660 1916 R0034

Actuator element - switch SG-EX22-CA	GHG 660 1916 R0035
Actuator element - key-operated switch SG-EX22-CC	GHG 660 1916 R0036
Actuator element - signal lamp SG-EX22-SI	GHG 660 1916 R0037

Notes for manufacturing, installation and operation

The notes for manufacturing, installation and operation also apply to this supplement.

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 19-19260

Zertifizierungssektor Explosionsschutz

Braunschweig, January 22, 2010

By order:

  
Dr.-Ing. M. Thedens  
Oberregierungsrat






## 2<sup>nd</sup> SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 1042 U

(Translation)

Equipment: Ex-d enclosure, type GHG 64.. ... R....

Marking:  II 2 G Ex d IIB, IIB+H<sub>2</sub> oder  II 2 G Ex d e IIB, IIB + H<sub>2</sub>  
 II 2 D Ex tD A21 IP66



Manufacturer: COOPER Crouse-Hinds GmbH

Address: Neuer Weg Nord 49, 69412 Eberbach, Germany

### Description of supplements and modifications

The GHG 64.. ... R.... enclosure is modified with the following additions:

- 1) The enclosure can also be marketed under the type name EXKO .....\_....
- 2) A new numbering system is used for the enclosure sizes (see the list below).
- 3) The depth of the enclosures is changed (see the list below).
- 4) The maximum ambient temperature is increased to +60 °C.
- 5) The order code for the actuator elements has been changed (see the list below).
- 6) The enclosure has been re-examined on the basis of standards EN 60079-0:2009 and EN 60079-31. The marking therefore changes to:

 II 2 G Ex d IIB, IIB + H<sub>2</sub> Gb or  II 2 G Ex d e IIB, IIB + H<sub>2</sub> Gb

 II 2 D Ex tb IIIC Db IP66



Technical data

Enclosure sizes

Enclosure	Former size	New size	Width mm	Length mm	Depth 1 mm	Depth 2 mm
GHG 64. 01.. R....	10	01	210	210	156	191
GHG 64. 02.. R....	11	02	210	320	156	191
GHG 64. 03.. R....	12	03	210	320	249	284
GHG 64. 04.. R....	13	04	320	320	156	191
GHG 64. 05.. R....	14	05	320	320	249	284
GHG 64. 06.. R....	15	06	320	430	156	191
GHG 64. 07.. R....	16	07	320	430	249	284
GHG 64. 08.. R....	17	08	430	430	249	284
GHG 64. 09.. R....	18	09	430	650	249	284
GHG 64. 10.. R....	19	10	430	650	402	437
GHG 64. 11.. R....	20	11	650	650	402	442

Ambient temperatures -55 °C to +60 °C and -20 °C to +60 °C  
(subject to the test pressure of the static overpressure test and the gas group)

Degree of 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 actuator elements and accessories

Description	Code for ordering
Threaded sleeve for plug-in bushing	GHG 660 1916 R0001
Flameproof bushing/threaded flameproof fastener - M36 thread / plug type	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	GHG 660 1916 R0005
Window Ø 90 mm	GHG 660 1916 R0006
Tappet bushing	GHG 660 1916 R0008
Flameproof bushing/threaded flameproof fastener - threaded	GHG 660 1916 R0020
Window max. 180x140mm	GHG 660 1916 R0021
Flameproof bushing/threaded flameproof fastener - plug-type	GHG 660 1916 R0022
Operating handle, complete - sheet 1	GHG 660 1916 R0023
Coupling bushes IIB and IIB+H2	GHG 660 1916 R0024
Actuator element - switch SG-EX22-AD	GHG 6409602 P....
Actuator element - slam button SG-EX22-BEY	GHG 6409603 P....
Actuator element - slam button SG-EX22-BEG	GHG 6409604 P....
Actuator element - slam button SG-EX22-BEMO	GHG 6409605 P....



Actuator element - slam button SG-EX22-BETR	GHG 6409606 P....
Actuator element - pushbutton SG-EX22-BI	GHG 6409607 P....
Actuator element - key-operated pushbutton SG-EX22-BY	GHG 6409608 P....
Actuator element - potentiometer switch adapter SG-EX22-BPCO	GHG 6409609 P....
Actuator element - potentiometer switch adapter SG-EX22-BPMV	GHG 6409610 P....
Actuator element - pushbutton SG-EX22-BR	GHG 6409611 P....
Actuator element - switch SG-EX22-CA	GHG 6409612 P....
Actuator element - key-operated switch SG-EX22-CC	GHG 6409613 P....
Actuator element - signal lamp SG-EX22-SI	GHG 6409614 P....

### Notes for manufacturing and operation

Components attached or installed (terminal compartments, bushings, Ex-type cable glands, connectors) must be of a technical standard that complies as a minimum with the specifications on the cover sheet, and they must have a separate examination certificate. The operating conditions specified in the component certificates must definitely be complied with, and the operating instructions must include a note to inform the operating company of this requirement. The method used for assessing the suitability of the used component must be documented in a verifiable manner in compliance with the QM system.

The enclosures may also be connected with suitable cable glands or conduit systems that meet the requirements in EN 60079-1:2006, sections 13.1 and 13.2, and for which a separate test certificate has been issued.

If the enclosure is connected by means of a conduit entry fitting which has been approved for this purpose, the required sealing device must be provided immediately at the enclosure.

Cable glands and blanking plugs of a simple design must not be used.

Openings that are not used must be sealed in compliance with the specifications in EN 60079-1:2006, section 11.

The screw plugs for the cover must be tightened with a torque of 30 Nm.

Repair and reconditioning of flameproof joints may only be performed in accordance with the manufacturer's design specifications. Repair on the basis of the values in table 2 of EN 60079-1 is not permitted.

For repair of separately certified components, the EC-Type Examination Certificates for these components must be observed.

### Applied standards

EN 60079-0:2009, EN 60079-1:2007, EN 60079-7:2007, EN 60079-31:2009

### Assessment and test report: PTB Ex 11-10169

Zertifizierungssektor Explosionsschutz

On behalf of PTB:

Dr.-Ing. G. Klausmeyer  
Direktor und Professor



Braunschweig, February 24, 2011

Sheet 3/3

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.