



## (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 1043 X**



(4) Equipment: Ex-d(e) control unit, control switch, terminal box, distribution unit, type GHG 64..... R....

(5) Manufacturer: Cooper Crouse-Hinds GmbH

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

(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 08-18110.

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


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

 **II 2 G Ex d e IIB, IIB+H2 T5,T6**

Zertifizierungsstelle Explosionsschutz

Braunschweig, June12, 2008

By order:

  
Dipl.-Phys. U. Völkel



(13)

## SCHEDULE

(14)

### EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 1043 X

(15) Description of equipment

The Ex-d(e) control unit, control switch, terminal box, distribution unit, type GHG 64..... R.... , designed to Flameproof Enclosure "d" type of construction consist of the empty enclosure, type GHG 64.. ... R... (PTB 08 ATEX 1042 U ). They can optionally be provided with - separately certified - actuator elements and display elements as well as an inspection window.

Connection is made with bushings leading into a flanged adapter box of Increased Safety "e" type of protection, with direct cable entry fittings or conduit systems, each provided with a separate examination certificate.

#### 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

##### Power loss

Enclosure	Size	Power loss T <sub>amb</sub> +40 °C		Power loss T <sub>amb</sub> +55 °C	
		T6	T5	T6	T5
		GHG 64. 10.. R....	10	94 W	134 W
GHG 64. 11.. R....	11	112 W	158 W	68 W	112 W
GHG 64. 12.. R....	12	140 W	195 W	84 W	140 W
GHG 64. 13.. R....	13	152 W	214 W	90 W	152 W
GHG 64. 14.. R....	14	197 W	280 W	113 W	197 W

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

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 08-18110

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

Should the 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 EN 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.

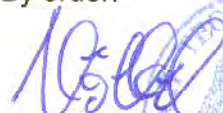
For repair of separately certified components, due regard must be given to the EC Type Examination Certificates of these components.

(18) Essential health and safety requirements

Met by compliance with the afore-mentioned Standards.

Zertifizierungsstelle Explosionsschutz

By order:

  
Dipl.-Phys. U. Völkel



Braunschweig, June 12, 2008

## 1st SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 1043 X

(Translation)

Equipment: Ex-d(e) control unit, control switch, terminal box, distribution unit,  
type GHG 64..... R.....

Marking:  II 2 G Ex d e IIB, IIB+H2 T5,T6


Manufacturer: Cooper Crouse-Hinds GmbH


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

### Description of supplements and modifications

The Ex-d(e) control unit, control switch, terminal box, distribution unit, type GHG 64..... R....., of Flameproof Enclosure "d" type of protection, is modified with the following additions:

- 1) The Ex-d(e) control unit, control switch, terminal box, distribution unit may also be employed in areas in which a potentially explosive atmosphere as a mixture of dust and air can occasionally form.
- 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 enclosures may optionally be interconnected with separately certified coupling bushes.
- 5) The actuator elements and accessory parts that are listed in the EC-Type-Examination Certificate (PTB 08 ATEX 1042 U) for the empty enclosure may be used.
- 6) The devices may optionally also be marked with the type name EXKO .....
- 7) The marking will now be:

 II 2 G Ex d IIB, IIB + H<sub>2</sub> T5, T6 and T4  
or

 II 2 G Ex de IIB, IIB + H<sub>2</sub> T5, T6 and T4  
or

 II 2 G Ex d e mb q ia/ib [ia/ib] IIB, IIB + H<sub>2</sub> T5, T6 and T4

 II 2 D Ex tD A21 IP65 T80°C, T95°C

Technical data

Rated voltage ..... up to 10 kV (Ex-e)\*  
 Rated current ..... max. 1150 A  
 Conductor size \*) ..... max. 300 mm<sup>2</sup>

\* The rated voltages for Ex-d enclosures are determined by the installed components and the minimum clearances and creepage distances specified in the relevant standards (e.g. EN 60 664-1) for the specific voltages.

Rated values are maximum values, the actual electrical values are determined by mounted electrical apparatus. Within these limiting values complying with the appropriate standards the manufacturer specifies the final limiting values dependent on power supply specifications, operating mode, utilisation category, etc. It will be the manufacturer's responsibility to specify the characteristic values of the intrinsically safe circuits.

If required, equipment designed to Intrinsic Safety "i" type of protection with a separate examination certificate will be installed.

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

Power loss

Size	Power loss T <sub>amb</sub> +40 °C		Power loss T <sub>amb</sub> +55 °C	
	T6	T5	T6	T5
10	94 W	134 W	54 W	94 W
11	112 W	158 W	68 W	112 W
12	140 W	195 W	84 W	140 W
13	152 W	214 W	90 W	152 W
14	197 W	280 W	113 W	197 W
15	187 W	260 W	110 W	187 W
16	275 W	385 W	160 W	275 W
17	275 W	385 W	160 W	275 W
18	275 W	385 W	160 W	275 W
19	470 W	640 W	290 W	470 W
20	470 W	640 W	290 W	470 W

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

Protection according to EN 60529 IP65

Braunschweig und Berlin

1st SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 1043 X

Special conditions for safe use

The "special conditions" also apply to this supplement.

Applied standards

EN 60079-0:2006	EN 60079-1:2007	EN 60079-5:2007	EN 60079-7:2007
EN 60079-11:2007	EN 60079-18:2004	EN 61241-0:2006	EN 61241-1:2004

Assessment and test report: PTB Ex 09-19261

Zertifizierungssektor Explosionsschutz  
By order:

Braunschweig, January 22, 2010

  
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 1043 X

(Translation)

Equipment: Ex-d(e) control unit, control switch, terminal box, distribution unit, type GHG 64..... R....

Marking:  II 2 G Ex d IIB, IIB + H2 T5, T6 and T4  
or II 2 G Ex de IIB, IIB + H2 T5, T6 and T4  
or II 2 G Ex d e mb q ia/ib [ia/ib] IIB, IIB + H2 T5, T6 and T4  
 II 2 D Ex tD A21 IP65 T80°C, T95°C

Manufacturer: COOPER Crouse-Hinds GmbH

Address: Neuer Weg Nord 49, 69412 Eberbach, Germany

### Description of supplements and modifications

The Ex-d(e) control unit, control switch, terminal box, distribution unit, type GHG 64..... R...., of Flameproof Enclosure "d" type of protection is modified with the following additions:

1) It 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> T5, T6 and T4 Gb

or

 II 2 G Ex de IIB, IIB + H<sub>2</sub> T5, T6 and T4 Gb

or

 II 2 G Ex d e mb q ia/ib [ia/ib] IIB, IIB + H<sub>2</sub> T5, T6 and T4 Gb

 II 2 D Ex tb IIIC T80°C, T95°C Db IP66

2) The Ex-d(e) control unit, control switch, terminal box, distribution unit can also be marketed under the type name EXKO .....\_.....

3) The maximum ambient temperature is increased to +60 °C.

4) The maximum conductor size is increased to 400 mm<sup>2</sup>.

5) The dissipation has been determined again (see the list below)

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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.

# Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

## 2nd SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 1043 X

### Technical data

Rated voltage ..... up to 10 kV (Ex-e)\*  
 Rated current..... max. 1150 A  
 Conductor size..... max. 400 mm<sup>2</sup>

\* The rated voltages for Ex-d enclosures are determined by the installed components and the minimum clearances and creepage distances specified in the relevant standards (e.g. EN 60 664-1) for the specific voltages.

Rated values are maximum values, the actual electrical values are determined by mounted electrical apparatus. Within these limiting values complying with the appropriate standards the manufacturer specifies the final limiting values dependent on power supply specifications, operating mode, utilisation category, etc. It will be the manufacturer's responsibility to specify the characteristic values of the intrinsically safe circuits.

If required, equipment designed to Intrinsic Safety "i" type of protection with a separate examination certificate will be installed.

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

### Dissipation

Size	Dissipation T <sub>amb</sub> +40 °C		Dissipation T <sub>amb</sub> +55 °C		Dissipation T <sub>amb</sub> <+60 °C	
	T6	T5	T6	T5	T6	T5
Enclosure size						
01	94 W	134 W	54 W	94 W	42 W	82 W
02	112 W	158 W	68 W	112 W	53 W	98 W
03	140 W	195 W	84 W	140 W	68 W	120 W
04	152 W	214 W	90 W	152 W	68 W	130 W
05	197 W	280 W	113 W	197 W	84 W	170 W
06	240 W	335 W	140 W	240 W	108 W	208 W
07	275 W	385 W	160 W	275 W	125 W	238 W
08	275 W	385 W	160 W	275 W	125 W	238 W
09	280 W	385 W	175 W	280 W	140 W	245 W
10	470 W	640 W	290 W	470 W	220 W	410 W
11	470 W	640 W	290 W	470 W	220 W	410 W

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

Degree of protection according to EN 60529 .....IP66



## 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 enclosure may 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.

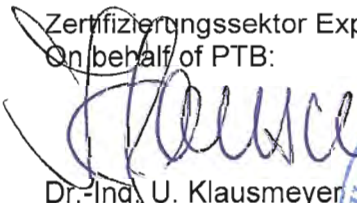
## Applied standards

EN 60079-0:2009, EN 60079-1:2007, EN 60079-7:2007, EN 60079-11:2007,  
EN 60079-18:2009, EN 60079-31:2009

Assessment and test report: PTB Ex 10-10199

Zertifizierungssektor Explosionsschutz  
On behalf of PTB:

Braunschweig, February 24, 2011

  
Dr.-Ing. U. Klausmeyer  
Direktor und Professor



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