



## (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 03 ATEX 1016 X**

(4) Equipment: Plug-in connector, type GHG 57. ....R....

(5) Manufacturer: CEAG Sicherheitstechnik GmbH

(6) Address: 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 03-12300.

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

**EN 50014: 1997 + A1 + A2**

**EN 50018: 2000**

**EN 50019: 2000**

**EN 50281-1-1:1998**

(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/D EEx de IIC T6 IP 66 T 52 °C**

Zertifizierungsstelle Explosionsschutz

Braunschweig, November 06, 2003

By order:

  
Dipl.-Phys. U. Völkel



(13)

## SCHEDULE

(14)

### EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 1016 X

(15) Description of equipment

The plug-in connector, type GHG 57, ....R.... , consists of the plug, the appliance connector, coupling, flange-mounting socket outlet, and angle unit. It is used for cable connections in potentially explosive atmospheres and comes as a metal version for Flameproof Enclosure and Increased Safety types of connection, or as a plastics version for Increased Safety type of connection.

The pin assignment has been staggered by 30 degrees (with reference to the thicker ground terminal, to make sure that only plugs and socket outlets of the same identification code can be used together.

Connection is by means of the integrated terminals connected to cage or piercing clamps or crimp termination or by means of prefabricated connecting cables (open-ended line, single conductors).

For adequate connection of the cable and proper installation, due regard shall be given to the instructions for operation.

#### Electrical data

##### **Crimp termination cage clamp connecting cable**

Rated voltage .....	up to	250 V
Rated current <sup>*)</sup> .....	max.	10 A
Utilization category .....		AC-1

<sup>\*)</sup> depending on conductor size

##### **Piercing clamp**

Rated voltage .....	up to	60 V
Rated current <sup>*)</sup> .....	max.	6 A
Utilization category .....		AC-1

<sup>\*)</sup> depending on conductor size

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.

Number of plug-in contacts ..... 4 +1

##### Rated cross section

Crimp termination .....	0.75 mm <sup>2</sup> to 2.5 mm <sup>2</sup>
Cage clamp .....	0.5 mm <sup>2</sup> to 1.5 mm <sup>2</sup>
Piercing clamp .....	0.34 mm <sup>2</sup> to 0.75 mm <sup>2</sup>
Connecting cable .....	1.0 mm <sup>2</sup> to 2.5 mm <sup>2</sup>

Ambient temperature max. for temperature class T6

Plastic version .....	-25 °C to 40 °C
Plastic version, shockproof .....	-55 °C to 40 °C
Metal version .....	-55 °C to 40 °C
Metal version, $I_{th}$ max. 2 A .....	-55 °C to 75 °C
Plastic version, $I_{th}$ max. 2 A; shockproof .....	-55 °C to 75 °C

(16) Test report PTB Ex 03-12300

(17) Special conditions for safe use

The elements of the plug-in connector are prepared with connecting cable (open-ended line) or they are provided with crimp termination, cage clamp or piercing clamp for connection at site.

For adequate connection of the cable and proper installation, due regard shall be given to the instructions for operation.

The connecting cable (open ended line) of the plug-in connector shall be installed to provide for permanent wiring and adequate protection against mechanical damage. The quality of the connecting cable shall be such that it complies with the local thermal and mechanical requirements.

Should the connecting cable (open-ended line) be connected in an area with potentially explosive atmosphere, a terminal compartment shall be used which meets the requirements of an approved type of protection in accordance with EN 50014, section 1.2.

If made from metal, the flange-mounting socket outlet, appliance connector, and angle unit may be installed in the walls of enclosures designed to Flameproof Enclosure "d" or Increased Safety "e" type of protection. The flameproof terminal compartment may have a volume of 2,000 cm<sup>3</sup> as a maximum. For the selection criteria and the installation conditions, reference is made to the notes furnished with the operating instructions.

If made from plastics, the flange-mounting socket outlet, appliance connector, and angle unit shall be installed in the walls of enclosures designed to Increased Safety "e" type of protection.

When using terminal compartments designed to Increased Safety "e" type of protection as specified in EN 50019, the clearance and creepage distances specified in section 4.3, section 4.4 and table 1 shall be duly considered.

Equipotential bonding and earthing shall be safeguarded by the way the metal flange-mounting socket outlet, appliance connector and/or angle unit are connected with the complete system.

At temperatures less than -20 °C, the plastic version of the plug-in connector shall be installed in a mechanically protected way.

The plastic angle unit may not be used if temperatures are lower than -20 °C.

In the non-plugged condition, the appliance connector must not be alive.

The plug-in connector consists of two or more parts which have to be installed in an appropriate way. This has been especially considered by the instructions. For a safe use these assembling instructions are to be followed precisely.

The operator/user shall be informed of the Special Conditions in a suitable form.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz  
By order:

Braunschweig, 06. November 2003

  
Dipl.-Phys. U. Völkel



## 1st SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 1016 X

(Translation)

Equipment: Plug-in connector, type GHG 57. ....R.....

Marking:  II 2 G/D EEx de IIC T6 IP 66 T52 °C

Manufacturer: Cooper Crouse-Hinds GmbH                      previously CEAG Sicherheitstechnik GmbH

Address:                      Neuer Weg Nord 49  
   69412 Eberbach, Germany

### Description of supplements and modifications

The plug-in connector, type GHG 57. ....R..... , will be manufactured with the following modifications:

- The metal version of the appliance connectors and the flange-mounting socket outlet with encapsulated connecting wires may also be installed in enclosures > 2,000 cm<sup>3</sup>.
- Connectors and couplings provided with a stainless-steel or CuZn enclosure with adequately modified cable entries may be connected by means of armoured cables.
- In systems with safety extra-low voltage, the coding pin (thicker pin) may also be used as a current carrying connection

### **Notes for manufacturing and operation**

- The tapped holes receiving the metal version of the appliance connectors and the flange mounting socket outlet with encapsulated connecting wires with internal thread shall meet the minimum requirements set forth in EN 50018, section 5.3 (table 3).
- This metal version of the appliance connectors and the flange mounting socket outlet with encapsulated connecting wires is suited for installation in electrical apparatus designed to Flameproof Enclosure "d" type of protection of groups I, IIA, IIB or IIC.
- If the reference pressure exceeds 20 bar, the metal version of the appliance connectors and the flange mounting socket outlet with encapsulated connecting wires shall be included in the type test of EN 50018, section 15.1.3 (overpressure test) as required for I, IIA, IIB or IIC classification of the corresponding operator/apparatus.

- The cable bushing shall be fixed in the electrical apparatus in such a way that rotation and accidental loosening will be prevented.

Test report: PTB Ex 04-13146

Zertifizierungsstelle Explosionsschutz

By order:

Braunschweig, July 15, 2004

  
Dr.-Ing. U. Klausmeyer  
Regierungsdirektor



**2nd SUPPLEMENT**  
according to Directive 94/9/EC Annex III.6  
**to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 1016 X**  
**(Translation)**

Equipment: Plug-in connector, type GHG 57. ....R....

Marking:  II 2 G EEx de IIC T6 II 2 D IP 66 T 52 °C

Manufacturer: Cooper Crouse-Hinds GmbH

Address: Neuer Weg-Nord 49  
69412 Eberbach, Germany

Description of supplements and modifications

The plug-in connector, type GHG 57. ....R..... , may be manufactured with the following modifications:

- For ease of handling, the geometry of the plug-in connector is modified.
- The plug-in-connector is also used for intrinsically safe circuits. The explosion-protection symbol for this application is: EEx ia/ib IIC T6

- The electrical data are extended:

Rated operating voltage	up to	60 V	
Rated current $I_e$	max.	2.5 A	0.5 A
Utilization category		L/R 10 ms	DC-3

Rated current  $I_e$  for

crimp and cage clamp connection	max.	10 A
QUICKON connection	max.	6 A

Provided the making and breaking capacities defined in the relevant regulations 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, utilisation category, etc.

Applied standards

EN 50014: 1997 + A1 + A2  
EN 50020: 2002

EN 50018: 2000 + A1  
EN 50281-1-1:1998

EN 50019: 2000



Notes for manufacturing and operation

Plug-in connector versions with old and new geometries cannot be combined with each other. If they have to be replaced, this has to be done in pairs. The user shall be informed of these conditions in an adequate form.

Test report: PTB Ex 05-14274

Zertifizierungsstelle Explosionsschutz  
By order:

Braunschweig, October 19, 2005

  
Dipl.-Phys. U. Völkel  




Physikalisch-Technische Bundesanstalt • Postfach 33 45 • 38023 Braunschweig

Cooper-Crouse Hinds GmbH  
z. Hd. Frau Frankhauser

Neuer Weg Nord 49  
69412 Eberbach

Ihr Zeichen:  
Ihre Nachricht vom: 28.01.2008  
Unser Zeichen: 3 5-2231-10/08-Ko  
Unsere Nachricht vom:

Bearbeitet von: Ruth Koch  
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Datum: 29.05.2008

**Normengenerationsänderung nach EN 60079-0 ff und EN 61241-0 ff**  
**Change of the standard generation to EN 60079-0 ff and EN 61241-0 ff**  
**Steckverbinder Typ GHG 57. ....R....**  
**Plug-ion connector type GHG 57. ....R....**

**PTB 03 ATEX 1016 X**

Sehr geehrte Frau Frankhauser,  
Dear Mrs. Frankhauser,

die Selbsterklärung zu dem o.g. Gerät auf Übereinstimmung mit den vorgenannten Normen hat die PTB zur Kenntnis genommen und den zugehörigen Prüfungsunterlagen beigefügt.  
Es bestehen keine sicherheitstechnischen Bedenken, das o.g. Gerät mit folgenden Kennzeichnungen zu versehen:

 II 2G Ex de IIC T6 bzw. II 2G Ex ia/ib IIC T6

 II 2D Ex tD A21 IP66 T80°C

Wir bitten Sie, diese Änderungen bei zukünftigen Ergänzungen mit aufzunehmen.

Your statement relating the above-named equipment concerning the conformity with the aforementioned standards was acknowledged by PTB and added to the related test documentation. There are no safety-related objections from PTB to mark the above mentioned equipment as follows:

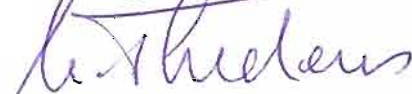
⊕ II 2G Ex de IIC T6 resp. II 2G Ex ia/ib IIC T6

⊕ II 2D Ex tD A21 IP66 T80°C

We would like to ask you to include this change into the next supplement.

Mit freundlichen Grüßen / Best regards

Im Auftrag / By order



Dr.-Ing. Martin Thedens  
Oberregierungsrat