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 97 ATEX 3197

(4) Equipment: Signalling unit and fire detector, type 2014/2-...

(5) Manufacturer: Fernsprech- und Signalbau GmbH & Co. KG
Schüler & Vershoven

(6) Address: D-42551 Velbert
Eintrachtstraße 95

(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 97-37001.

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

DIN EN 50 014:1994-03 DIN EN 50 018:1995-03,
DIN EN 50 019:1996-03 DIN EN 50 028:1988-07

(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 EEx emd IIC T6

Zertifizierungsstelle Explosionsschutz
By order:
(*signature*)

Dr.-Ing. H. Wehinger
Direktor und Professor

Braunschweig, October 7, 1997

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 97 ATEX 3197

(15) Description of equipment

The signalling units, types 2014/2 and 2014/2-GLU, (e.g. fire detectors) consist of an enclosure made from a glass-fibre reinforced polyester resin compound, which can accommodate - separately certified - components, such as pushbuttons, electronic modules and terminal blocks.

Depending on the components used, type-of-protection marking "d" or "m" may not be required.

(16) Test Report No. PTB Ex 97-37001 (consisting of 7 pages, description and one drawing)

(17) Special conditions for safe use

Does not apply

(18) Essential health and safety requirements

The control boxes must be provided with - separately certified - cable glands as well as sealing plugs.

Zertifizierungsstelle Explosionsschutz
By order:

(signature)

Dr.-Ing. H. Wehinger
Direktor und Professor

Braunschweig, October 7,1997

2 pages, correct and complete as regards content.
On behalf of PTB:

Dr.-Ing. M. Theders
Oberregierungsrat

Braunschweig, October 28, 2010

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 30

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1st SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 97 ATEX 3197

(Translation)

Equipment: Signalling unit and fire detector, type 2014/2-...

Marking: ⟨Ex⟩ **II 2 G EEx emd IIC T6**

Manufacturer: Fernsprech- und Signalbau GmbH & Co. KG
Schüler & Vershoven

Address: Eintrachtstraße 95, 42551 Velbert, Germany

Description of supplements and modifications

The signalling and fire detector unit of type 2014/2-... can optionally be provided with an ESD conductive varnish coat, type 2K-PUR (colour code for instance RAL 3000).

The company name has been changed. The new name is:

FHF Funke + Huster Fernsig GmbH

Test report: PTB Ex 02-12261

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, September 13, 2002

(signature)

Dr.-Ing. U. Klausmeyer
Regierungsdirektor

1 page, correct and complete as regards content.
By order

Dr.-Ing. M. Thedens
Oberregierungsrat

Braunschweig, October 28, 2010

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

Sheet 1/1

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

2nd SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 97 ATEX 3197

(Translation)

Equipment: Signalling unit and fire alarm box, type 2014/2-...

Marking: Ⓔx **II 2 G Ex e d mb IIC T6**

Manufacturer: FHF Funke + Huster Fernsig GmbH

Address: Gewerbeallee 15 - 19, 45478 Mülheim a.d. Ruhr, Germany

Description of supplements and modifications

The signalling unit and fire alarm box, type 2014/2-..., is modified in the following respects:

- The signalling unit and fire alarm box can optionally be manufactured with the dimensions 127 mm x 135 mm.
- The signalling unit and fire alarm box can optionally be coated with electrically conductive varnish M27.47.-(paint) -2K PU.
- A name plate made from a polyester film may optionally be used.
- The maximum ambient temperature range is extended to -55 °C to +85 °C.

The signalling unit and fire alarm box has been re-inspected on the basis of Standards EN 60079-0, EN 60079-1, EN 60079-7 and EN 60079-18.
The marking will thus change to:

Ⓔx **II 2 G Ex e d mb IIC T6, T5**

The company's address changes to:
FHF Funke Huster Fernsig GmbH
Gewerbeallee 15 – 19
45478 Mülheim, Germany

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

2nd SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 97 ATEX 3197

Technical data

Rated cross section	max. 2.5 mm²
For the fire alarm module	
Rated voltage	max. 110 V
Power loss	max. 1.8 W
For the push-button element	
Rated voltage	max. 275 V
Rated current for installed elements	max. 2.5 A
max. ambient temperature range T6	- 55°C to +65 °C
max. ambient temperature range T5	- 55°C to +85 °C
Shock protection and protection against ingress of solid foreign bodies and water:	IP 66 according to EN 60529

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

The admissible temperature range of the installed elements must not be exceeded.

Notes for manufacturing and operation

Degree of protection IP 66 will be safeguarded only when sealing and cable entry fittings are properly fitted. The manufacturer's instructions must be followed.

Applied standards

EN 60079-0:2007 **EN 60079-1:2004** **EN 60079-7:2007**

EN 60079-18:2004

Test report: PTB Ex 08-17341

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, February 21, 2008

Dr.-Ing. M. Thedens
Oberregierungsrat

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

3. 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 97 ATEX 3197

(Translation)

Equipment: Signalling unit and fire alarm box, type 2014/2-...

Marking: ⟨Ex⟩ **II 2G Ex e d mb IIC T6, T5**

Manufacturer: FHF Funke + Huster Fernsig GmbH

Address: Gewerbeallee 15 - 19, 45478 Mülheim a.d. Ruhr, Germany

Description of supplements and modifications

The signalling unit and fire alarm box type 2014/2-... can also be used in areas in which explosive atmosphere of dust/air mixtures has to be expected occasionally.

The marking will thus change to:

⟨Ex⟩ **II 2 G Ex e d mb IIC T6, T5**

⟨Ex⟩ **II 2 D Ex tD A21 IP66 T 100 °C**

Technical data

Rated cross section	max. 2.5 mm²
For the fire alarm module	
Rated voltage	max. 110 V
Power loss	max. 1.8 W
For the push-button element	
Rated voltage	max. 275 V
Rated current for installed elements	max. 2.5 A
max. ambient temperature range T6	- 55°C to +65 °C
max. ambient temperature range T5	- 55°C to +85 °C
Shock protection and protection against ingress of solid foreign bodies and water:	IP 66 according to EN 60529

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 97 ATEX 3197

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

The admissible temperature range of the installed elements must not be exceeded.

Applied standards

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

Assessment and test report: PTB Ex 09-19113

Zertifizierungssektor Explosionsschutz
By order:

Dr.-Ing. M. Thedens
Oberregierungsrat

Braunschweig, June 9, 2009

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

4th SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 97 ATEX 3197

(Translation)

Equipment:	Signalling unit and fire alarm box, type 2014/2-***
Marking:	⟨Ex⟩ **II 2G Ex e d mb IIC T6, T5**
	⟨Ex⟩ **II 2D Ex tD A21 IP66 T100 °C**
Manufacturer:	FHF Funke + Huster Fernsig GmbH
Address:	Gewerbeallee 15 - 19, 45478 Mülheim a.d. Ruhr, Germany

Description of supplements and modifications

The signalling unit and fire alarm box has been re-inspected on the basis of Standards EN 60079-0:2009, EN 60079-1:2007, EN 60079-7:2007, EN 60079-18:2009 and EN 60079-31:2009.

The marking will thus change to:

⟨Ex⟩ **II 2 G Ex d e mb IIC T6 Gb**

⟨Ex⟩ **II 2 G Ex d e mb IIC T5 Gb**

⟨Ex⟩ **II 2 G Ex d e IIC T5 Gb**

⟨Ex⟩ **II 2 D Ex tb IIIC T 100 °C Db IP66**

Normal.dotm

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 97 ATEX 3197

Technical data

Rated cross section	max. 2.5 mm²
For the fire alarm module	
Rated voltage	max. 110 V
Power dissipation	max. 1.8 W
For the push-button element	
Rated voltage	max. 275 V
Rated current for installed elements	max. 2.5 A
max. ambient temperature range T6	- 55°C to +65 °C
max. ambient temperature range T5	- 55°C to +85 °C
Protection against solid foreign objects, water and contact	IP 66 according to EN 60529

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

The admissible temperature range of the installed elements must not be exceeded.

Applied standards

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

Assessment and test report: PTB Ex 12-12101

Zertifizierungssektor Explosionsschutz
On behalf of PTB:

Dr.-Ing. M. Thedens
Oberregierungsrat

Braunschweig, August 17, 2012

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 1099 U

(4) Component: Built-in switch type 366 .. .. .

(5) Manufacturer: Fernsprech- und Signalbau GmbH & Co. KG
Schüler & Vershoven

(6) Address: Eintrachtstraße 95, D-42551 Velbert

(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 98-18055.

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

EN 50 014:1997 **EN 50 018:1994**

(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:

Ex II 2 G EEx d IIC I M 2 EEx d I

Zertifizierungsstelle Explosionsschutz
By order

Dr.-Ing. U. Klausmeyer
Oberregierungsrat

Braunschweig, December 10, 1998

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE No. PTB 98 ATEX 1099 U

(15) Description of component

The type 366 .. .. . built-in switch serves as an auxiliary current switch for signal and control circuits.

Encapsulated single-core non-sheathed cables are used for connection.

Technical data

Rated voltage	up to	30 V		250 V	
Rated current	max.	5 A	0,25 A	0,03 A	5 A
Related to utilization category		DC-1	DC-15	DC-15	AC-1

In accordance with the relevant provisions, rated values other than those stated above are permissible if the making and breaking capacity is complied with; they have been specified by the manufacturer, dependent on the mode of operation, utilization category, etc.

Contacts provided 1 break contact, make contact or changeover contact

For temperature class			T6	T5
at a rated thermal current of			5 A	
and an ambient temperature of	-20 °C	up to	75 °C	90 °C

This built-in switch has been designed for thermal stability up to 100 °C.

Nominal conductor area ..... max. 2 or 3 x 0.75 mm²

(16) Report PTB Ex 98-18055, description (4 sheets), drawing No. 6046-1/VIII (2), parts list No. ST 6946-1/VIII

(17) Special conditions for safe use

The switch is to be installed in an enclosure which complies with the requirements of a recognized type of protection according to EN 50 014, section 1.2.

If the switch is installed in an enclosure of the type of protection increased safety "e" according to EN 50 019, the creepage distances and clearances according to section 4.3, section 4.4 and Table 1 must be complied with.

The component may be used in both group I and II, as in this case the requirements of the standard are identical.

Routine test

It is not necessary to carry out the routine test according to EN 50 018 section 16.1.1, as the volume of the switch is smaller than 10 cm^3 and, according to section 16.2, enclosures with a volume of 10 cm^3 or less are exempted from the routine test.

(18) Essential health and safety requirements

The tests carried out and their positive results show that the precision switch complies with the requirements of Directive 94/9/EC and of the standards stated on the cover sheet.

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, December 10, 1998

Dr.-Ing. U. Klausmeyer
Oberregierungsrat

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 1099 U

(Translation)

Equipment: Build-in switch, type 366..

Marking: Ⓔx **II 2 G EEx d IIC**
Ⓔx **I M 2 EEx d I**

Manufacturer: FHF Funke + Huster Fernsig GmbH

Address: Gewerbeallee 15 - 19, 45478 Mülheim a.d. Ruhr, Germany

Description of supplements and modifications

Another sealing compound in addition to the one used in the past is to be applied; the range of ambient temperatures is to be extended and converted to the new generation of standards. For a detailed description, technical data and the required documents, reference is made to the test documents that are attached to the Test Report.

Admissible ambient temperatures : -55 °C to +90 °C

Applied standards

EN 60079-0:2004 **EN 60079-1:2004**

The switch is provided with the following modified marking:

Ⓔx **II 2 G Ex d IIC**
Ⓔx **I M 2 Ex d I**

Test report: PTB Ex 07-17233

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. U. Klausmeyer
Direktor und Professor

Braunschweig, November 15, 2007

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

2nd SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 98 ATEX 1099 U

(Translation)

Equipment: Build-in switch, type 366..

Marking: ⟨Ex⟩ **II 2 G Ex d IIC**
⟨Ex⟩ **I M 2 Ex d I**

Manufacturer: FHF Funke + Huster Fernsig GmbH

Address: Gewerbeallee 15 - 19, 45478 Mülheim a.d. Ruhr, Germany

Description of supplements and modifications

The standards were upgraded. Therefore the marking changes to:

⟨Ex⟩ **II 2 G Ex d IIC Gb**
⟨Ex⟩ **I M 2 Ex d I Mb**

Applied standards

EN 60079-0:2009 **EN 60079-1:2007**

Test report: PTB Ex 12-12138

Zertifizierungsstelle Explosionsschutz
By order:
Dr.-Ing. M. Thedens
Oberregierungsrat

Braunschweig, July 9, 2012

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 03 ATEX 2212 U

(4) Equipment: Fire alarm modules, type I 2014, type II 2014, type III GLU and type IV GLU

(5) Manufacturer: FHF Funke + Huster Fernsig GmbH

(6) Address: Eintrachtstraße 95, 42551 Velbert, 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 03-23184.

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

EN 50014:1997 + A1 + A2 **EN 50028:1987**

(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 EEx m II

Zertifizierungsstelle Explosionsschutz
By order:

(signature)

Dr.-Ing. U. Gerlach

Braunschweig, October 24, 2003

3 pages, correct and complete as regards content.
By order:

Dr.-Ing. Johannsmeyer Braunschweig, December 14, 2007
Direktor und Professor

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2212 U

(15) Description of equipment

The modules are intended for the application in signalling units monitoring the closed-circuit current in fire alarm systems. The modules are completely encapsulated and only suitable for installation into an enclosure of min. IP 54. In accordance with the functional principle of the electrical system the modules are distinguished as follows:

Modules for polarity reversal of d.c.-detector zones
Modules for current increase or current decrease

Electrical data

Type of module	**I 2014**
Voltage DC/AC (blue/red)	<26 V
Power	<1.3 W
Type of module	**II 2014**
Voltage DC/AC (yellow/green)	<15 V
Power	<1.3 W
Bridge	---
Voltage DC/AC (blue/red)	<15 V
Power	<1.3 W
Bridge	---
Voltage DC/AC (blue/yellow)	<26 V
Power	<1.8 W
Bridge	green/red
Type of module	**III GLU**
Voltage DC/AC (green/blue)	<75 V
Power	<1.3 W
Voltage DC/AC (green/yellow)	<11 V
Power	<1.3 W
Voltage DC/AC (blue/yellow)	<75 V
Power	<1.3 W
Type of module	**IV GLU**
Voltage DC/AC (red/green)	<15 V
Power	<0.26 W
Current	---
Voltage DC/AC (blue/green)	<15 V
Power	<0.26 W
Current	---
Voltage DC/AC (blue/red)	<26 V
Current	<75 mA

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2212 U

(16) Test report PTB Ex 03-23184

(17) Special conditions for safe use

not applicable

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz
By order:

(signature)

Dr.-Ing. U. Gerlach

Braunschweig, October 24, 2003

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2212 U

(Translation)

Equipment: Fire alarm modules, type I 2014, type II 2014, type III GLU and type IV GLU

Marking: ⟨Ex⟩ **II 2 G Ex mb II**

Manufacturer: FHF Funke + Huster Fernsig GmbH

Address: Gewerbeallee 15-19, 45478 Mülheim a.d. Ruhr, Germany

Description of supplements and modifications

In the future the fire alarm modules may also be encapsulated with the potting compounds of types EP 5470 FR and PU 4110.

Therefore the modules applied may be operated in an extended temperature range for the temperature classes T5 and T6 as follows:

T5: -55 °C ≤ Ta ≤ +80 °C
T6: -55 °C ≤ Ta ≤ +65 °C

By this supplement the requirements of the standards stated below are complied with.

Applied standards

EN 60079-0:2006 **EN 60079-18:2004**

Test report: PTB Ex 07-27251

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Braunschweig, December 13, 2007

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

2 SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2212 U

(Translation)

Component: Fire alarm modules, type I 2014, type II 2014, type III GLU und type IV GLU

Marking: **II 2 G Ex mb II**

Manufacturer: FHF Funke + Huster Fernsig GmbH

Address: Gewerbeallee 15-19
45478 Mülheim a.d. Ruhr, Germany

Description of supplements and modifications

In the future the fire alarm modules shall be marked as follows:

II 2 G Ex mb IIC Gb

All other specifications of the EC-Type Examination Certificate and the supplement apply without changes.

Applied standards

EN 60079-0:2009, EN 60079-18:2009

Test report: PTB Ex 12-22110

Zertifizierungssektor Explosionsschutz
On behalf of PTB:

Braunschweig, July 6, 2012

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 24

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