

### INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx BVS 11.0033	The second secon	issue No.:0	Certificate history:	
Status:	Current				
Date of Issue:	2011-05-26		Page 1 of 5		
Applicant:	FHF Funke + Hust Gewerbeallee 15-19 45478 Mülheim a. d. Germany	-	bΗ		
Electrical Apparatus:	Ruggedized ExII tele	ephone			
Optional accessory:					
Optional accessory:  Type of Protection:	protection encapsu	lation 'm' electric	al apparatus, Equi	ion, test and marking of pment protection by incr y intrinsic safety 'iD'	
,	protection encapsu	lation 'm' electric on by enclosures 5	al apparatus, Equi	pment protection by incr	
Type of Protection:	protection encapsu safety "e", Protection Ex emb [ib] IIC T6/T Ex tD [ibD] A21 IP66	lation 'm' electric on by enclosures 5	eal apparatus, Equi "tD", Protection b	pment protection by incr	
Type of Protection:  Marking:  Approved for issue on b	protection encapsu safety "e", Protection Ex emb [ib] IIC T6/T Ex tD [ibD] A21 IP66	Iation 'm' electric on by enclosures 5 3 T80°C/T100°C HCh. Simar	eal apparatus, Equi "tD", Protection b	pment protection by incr	
Type of Protection:  Marking:  Approved for issue on b Certification Body:	protection encapsu safety "e", Protection Ex emb [ib] IIC T6/T Ex tD [ibD] A21 IP66	Iation 'm' electric on by enclosures 5 3 T80°C/T100°C HCh. Simar	eal apparatus, Equi "tD", Protection b	pment protection by incr	

Certificate issued by:

DEKRA EXAM GmbH Dinnendahistrasse 9 44809 Bochum Germany





Certificate No.:

**IECEx BVS 11.0033** 

Date of Issue:

2011-05-26

Issue No.: 0

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Manufacturer:

FHF Funke + Huster Fernsig GmbH

Gewerbeallee 15-19 45478 Mülheim a. d. Ruhr

Germany

#### Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

#### STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0: 2004

Electrical apparatus for explosive gas atmospheres - Part 0: General requirements

Edition: 4.0

IEC 60079-11: 2006

Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

Edition: 5 Edition: 2.0

IEC 60079-18: 2004

Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and

marking of type of protection encapsulation 'm' electrical apparatus

IEC 60079-7: 2006-07

Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

Edition: 4

IEC 61241-0: 2004

Electrical apparatus for use in the presence of combustible dust - Part 0: General

requirements

Edition: 1 IEC 61241-1: 2004

Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by

Edition: 1

IEC 61241-11: 2005

Electrical apparatus for use in the pressence of combustible dusts - Part 11: Protection by

Edition: 1

intrinsic safety 'iD'

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

#### **TEST & ASSESSMENT REPORTS:**

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

DE/BVS/ExTR11.0058/00

**Quality Assessment Report:** 

DE/BVS/QAR07.0004/03



Certificate No.:

IECEx BVS 11.0033

Date of Issue:

2011-05-26

Issue No.: 0

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#### Schedule

#### **EQUIPMENT:**

Equipment and systems covered by this certificate are as follows:

#### **Description**

The Ruggedized ExII telephone type ExResistTel is suitable for use in areas endangered by an explosive atmosphere. The vertical mounting is permitted.

The handset, the keyboard and the display are designed in type of protection intrinsic safety "i".

The electrical connection of the Ruggedized ExII telephone type ExResistTel is realised by terminals in type of protection increased safety "e".

The ambient temperature range is -25 °C up to +40 °C respectively +60 °C. Depending on the upper ambient temperature the temperature class and the surface temperature will change.

A breathing and draining device is part of the Ruggedized ExII telephone type ExResistTel.

-	CONDITIONS OF CERTIFI	ICATION: NO		
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#### EQUIPMENT(continued):

Pa	ra	m	e	te	rs

Non intrinsically safe circuits

Maximum short circuit current IK

Phone line (Terminal La / Lb No.: 13 - 14)

Maximum voltage (calling) Um (calling) 16 up to 54 Permitted frequency range Hz Um (calling) AC 150 Maximum voltage (calling) Permitted frequency range 15 up to 68 Hz Um (supply voltage) DC 66 Maximum rated voltage Maximum rated current 100 mΑ DC 56.5 Maximum rated voltage Um (supply voltage) Maximum rated current 110 mΑ

Additional external alarm: only for connection to passive load (Terminal W1 / W No.: 15 - 16)

Maximum voltage (calling) Um (calling) AC 90 Permitted frequency range 16 up to 54 Ηz Maximum voltage (calling) Um (calling) AC 150 Permitted frequency range 15 up to 68 Hz Maximum rated voltage Um (supply voltage) DC 66 DC 56.5 Maximum rated voltage Um (supply voltage)



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#### Additional information:

#### Intrinsically safe circuits

Headset (Microphone) (Terminal KGM No.: 5 - 6)

Maximum output voltage	Uo	17	V
Maximum output current	lo	90	mΑ
Maximum output power	Po	80	mW
Maximum external capacitance	Co	375	nF
Maximum external inductance	Lo	1.2	mΗ

#### Headset (Speaker) (Terminal KGH No.: 7 - 8)

Maximum output voltage	Uo	17	V
Maximum output current	lo	90	mΑ
Maximum output power	Po	190	mW
Maximum external capacitance	Co	375	nF
Maximum external inductance	Lo	1.2	mΗ

### Headset (Signalling) (Terminal KGS No.: 9 - 10)

Maximum output voltage	Uo	17	V
Maximum output current	lo	8	mΑ
Maximum output power	Po	33	mW
Maximum external capacitance	Co	375	nF
Maximum external inductance	Lo	100	mΗ

Maximum output voltage	Uo	6.6	V
Maximum output current	lo	250	mΑ
Maximum output power	Po	370	mW
Maximum external capacitance	Co	22	μF
Maximum external inductance	Lo	0.3	mΗ

#### Ambient temperature range

Temperature class T6	-25 °C up to +40 °C
Temperature class T5	-25 °C up to +60 °C



### INTERNATIONAL ELECTROTECHNICAL COMMISSION **IEC Certification Scheme for Explosive Atmospheres**

for rules and details of the IECEx Scheme visit www.iecex.com

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IECEx BVS 11.0033

issue No.:1

Certificate history:

Status:

Current

Issue No. 1 (2013-4-9) Issue No. 0 (2011-5-26)

Date of Issue:

2013-04-09

Page 1 of 6

Applicant:

FHF Funke + Huster Fernsig GmbH

Gewerbeallee 15-19 45478 Mülheim a. d. Ruhr

Germany

**Electrical Apparatus:** Optional accessory:

Ruggedized ExII telephone

Type of Protection:

Equipment protection by intrinsic safety "i", Equipment protection by encapsulation "m", Equipment dust ignition protection by enclosure 't', Equipment protection by

increased safety "e"

Marking:

Ex e mb [ib] IIC T6/T5 Gb

Ex tb [ib] IIIC T80°C/T100°C Db

Approved for issue on behalf of the IECEx

Certification Body:

Dr. F. Eickhoff

Position:

Deputy Head of Certification Body

Signature:

(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.

2. This certificate is not transferable and remains the property of the issuing body.

3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**DEKRA EXAM GmbH** Dinnendahlstrasse 9 44809 Bochum Germany





Certificate No.:

IECEx BVS 11.0033

Date of Issue:

2013-04-09

Issue No.: 1

Page 2 of 6

Manufacturer:

FHF Funke + Huster Fernsig GmbH

Gewerbeallee 15-19 45478 Mülheim a. d. Ruhr

Germany

Additional Manufacturing location

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

#### STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0: 2011

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Explosive atmospheres - Part 0: General requirements

Edition: 6.0

IEC 60079-11: 2011

Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

Edition: 6.0

IEC 60079-18: 2009

Explosive atmospheres Part 18: Equipment protection by encapsulation "m"

Edition: 3

IEC 60079-31: 2008

Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure 't'

Edition: 1

IEC 60079-7: 2006-07

Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

Edition: 4

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

#### **TEST & ASSESSMENT REPORTS:**

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

DE/BVS/ExTR11.0058/01

**Quality Assessment Report:** 

DE/BVS/QAR07.0004/06



Certificate No.:

IECEx BVS 11.0033

Date of Issue:

2013-04-09

Issue No.: 1

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Schedule

#### **EQUIPMENT:**

Equipment and systems covered by this certificate are as follows:

#### Subject and type

Ruggedized ExII telephone type ExResistTel

#### Description

The Ruggedized ExII telephone type ExResistTel is suitable for use in areas endangered by an explosive atmosphere. The vertical mounting is permitted.

The handset, the keyboard and the display are designed in type of protection intrinsic safety "i".

The electrical connection of the Ruggedized ExII telephone type ExResistTel is realised by terminals in type of protection increased safety "e".

The ambient temperature range is -25 °C up to +40 °C respectively +60 °C. Depending on the upper ambient temperature the temperature class and the surface temperature will change.

A breathing and draining device is part of the Ruggedized ExII telephone type ExResistTel.

CONDITIONS OF CERTIFICATION: NO



Certificate No.:

IECEx BVS 11.0033

Date of Issue:

2013-04-09

Issue No.: 1

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#### **EQUIPMENT(continued):**

#### <u>Parameters</u>

Non intrinsically safe circuits							
Phone line (Terminal La / Lb No.: 13 - 1							
Maximum voltage (calling)	U <sub>m</sub> (calling)	AC	90	V			
Permitted frequency range			16 up to 54	Hz			
or							
Maximum voltage (calling)	U <sub>m</sub> (calling)	AC	150	V			
Permitted frequency range			15 up to 68	Hz			
or	<u> </u>	_					
Maximum rated voltage	U <sub>m</sub> (supply voltage)	DC	66				
Maximum rated current			100	mΑ			
or	]						
Maximum rated voltage	U <sub>m</sub> (supply voltage)	DC	56.5	\ <u>\</u>			
Maximum rated current		•	110	mA			
Maximum short circuit current I <sub>K</sub>	35	Α	-				
Additional external alarm; only for conne	ection to passive load (Ter	mina	W1 / W No.: 15	5 - 16)			
		. 1					
Maximum voltage (calling)	U <sub>m</sub> (calling)	AC	90				
Permitted frequency range	1		16 up to 54	Hz			
or			<u> </u>				
Maximum voltage (calling)	U <sub>m</sub> (calling)	AC	150				
Permitted frequency range			15 up to 68	Hz			
or	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
Maximum rated voltage	U <sub>m</sub> (supply voltage)	DC	66	V			
or							
Maximum rated voltage	U <sub>m</sub> (supply voltage)	DC	56.5				



Certificate No.:

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2013-04-09

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

The reason for this supplement is the updating to the current standards.



Certificate No.:

IECEx BVS 11.0033

Date of Issue:

2013-04-09

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#### Additional information:

Parameters continued			
Intrinsically safe circuits	]		
Headset (Microphone) (Terminal	KGN	И No.: 5 - 6	)
Maximum output voltage	l∩° 1	17	[v ]
			-
Maximum output current	l <sub>o</sub>	90	mA
Maximum output power	P <sub>o</sub>	80	mW
Maximum external capacitance	:=	375	lnF
Maximum external inductance		1.2	mH
Headset (Speaker) (Terminal KG	J H NA	0 : 7 - 8)	
readset (opeaker) (Terminarite	1	J., 1 - 0)	
Maximum output voltage	U <sub>o</sub>	17	V
Maximum output current	l <sub>o</sub>	110	mA
Maximum output power	Po	190	mW
Maximum external capacitance	Со	375	nF
Maximum external inductance	Lo	1.2	mH
			100
Headset (Signalling) (Terminal K		lo.: 9 - 10)	
Maximum output voltage	U <sub>o</sub>	17	٧
Maximum output current	0	8	mA
Maximum output power	Po	33	mW
Maximum external capacitance	Co	375	nF
Maximum external inductance	L <sub>o</sub>	100	mH
	].		
External speaker (Terminal LSP		11 - 12)	
Maximum output voltage	U <sub>o</sub>	6.6	V
Maximum output current	0	250	mA
Maximum output power	لتساه	370	mW
Maximum external capacitance	c <sub>°</sub>	22	μF
Maximum external inductance	L <sub>o</sub>	0.3	mH
Ambient temperature range			
Temperature class T6	H	-25 °C up to	
Temperature class T5	Щ	-25 °C up to	0 +60 °C



### INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

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IECEx BVS 11.0033

issue No.:2

Certificate history:

Status:

Current

Issue No. 2 (2015-7-29) Issue No. 1 (2013-4-9) Issue No. 0 (2011-5-26)

Date of Issue:

2015-07-29

Page 1 of 6

Applicant:

FHF Funke + Huster Fernsig GmbH

Gewerbeallee 15-19

45478 Mülheim an der Ruhr

Germany

Electrical Apparatus: Optional accessory:

Ruggedized ExII telephone type ExResistTel

Type of Protection:

Equipment protection by intrinsic safety "i", Equipment protection by encapsulation "m", Equipment dust ignition protection by enclosure "t", Equipment protection by

increased safety "e"

Marking:

Ex e mb [ib] IIC T6/T5 Gb

Ex tb [ib] IIIC T80°C/T100°C Db

See general product information for Details

Approved for issue on behalf of the IECEx

Certification Body:

H.-Ch. Simanski

Position:

Head of Certification Body

Signature:

(for printed version)

Date:

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1. This certificate and schedule may only be reproduced in full.

2. This certificate is not transferable and remains the property of the issuing body.

3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany





Certificate No.:

**IECEx BVS 11.0033** 

Date of Issue:

2015-07-29

Issue No.: 2

Page 2 of 6

Manufacturer:

FHF Funke + Huster Fernsig GmbH

Gewerbeallee 15-19 45478 Mülheim an der Ruhr

Germany

Additional Manufacturing location (s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

#### **STANDARDS:**

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0: 2011

Explosive atmospheres - Part 0: General requirements

Edition: 6.0

IEC 60079-11: 2011

Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

Edition: 6.0

IEC 60079-18: 2014

Explosive atmospheres - Part 18: Equipment protection by encapsulation "m"

Edition: 4.0

IEC 60079-31: 2013

Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

Edition: 2

IEC 60079-7: 2006-07

Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

Edition: 4

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

#### **TEST & ASSESSMENT REPORTS:**

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

DE/BVS/ExTR11.0058/02

**Quality Assessment Report:** 

DE/BVS/QAR07.0004/08



Certificate No.:

IECEx BVS 11.0033

Date of Issue:

2015-07-29

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#### Schedule

#### **EQUIPMENT:**

Equipment and systems covered by this certificate are as follows:

#### General product information:

Ruggedized ExII telephone type ExResistTel

#### Description

The Ruggedized ExII telephone type ExResistTel is suitable for use in areas endangered by an explosive atmosphere. The vertical mounting is permitted.

The handset, the keyboard and the display are designed in type of protection intrinsic safety "i".

The electrical connection of the Ruggedized ExII telephone type ExResistTel is realised by terminals in type of protection increased safety "e".

The ambient temperature range is -25 °C up to +40 °C respectively +60 °C. Depending on the upper ambient temperature, the temperature class and the surface temperature will change.

A breathing and draining device is part of the Ruggedized ExII telephone type ExResistTel.

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Date of Issue:

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#### **EQUIPMENT**(continued):

Maximum rated voltage

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Non intrinsically safe circuits						
hone line (Terminal La / Lb No.: 13 - 14)						
U <sub>m</sub> (calling)	AC	90	V			
	16 up to	54	Hz			
U <sub>m</sub> (calling)	AC	150	V			
	15 up to	68	Hz			
U <sub>m</sub> (supply voltage)	DC	66	V			
		100	mΑ			
U <sub>m</sub> (supply voltage)	DC	56.5	٧			
		110	mΑ			
		35	Α			
Additional external alarm: only for connection to passiv load (Terminal W1 / W No.: 15 - 16)						
U <sub>m</sub> (calling)	AC	90	٧			
	16 up to	54	Hz			
U <sub>m</sub> (calling)	AC	150	V			
	15 up to	68	Hz			
U <sub>m</sub> (supply voltage)	DC	66	V			
	U <sub>m</sub> (calling)  U <sub>m</sub> (calling)  U <sub>m</sub> (supply voltage)  U <sub>m</sub> (supply voltage)  ection to passiv load (Ter U <sub>m</sub> (calling)  U <sub>m</sub> (calling)	U <sub>m</sub> (calling) AC 16 up to  U <sub>m</sub> (calling) AC 15 up to  U <sub>m</sub> (supply voltage) DC  U <sub>m</sub> (supply voltage) DC  ection to passiv load (Terminal W1 / W U <sub>m</sub> (calling) AC 16 up to  U <sub>m</sub> (calling) AC 15 up to	Um(calling)         AC         90           16 up to         54           Um(calling)         AC         150           15 up to         68           Um(supply voltage)         DC         66           100         100           Um(supply voltage)         DC         56.5           110         35           ection to passiv load (Terminal W1 / W No.: 150           Um(calling)         AC         90           16 up to         54           Um(calling)         AC         150           15 up to         68			

 $U_{m}$ (supply voltage)

DC

56.5 V



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IECEx BVS 11.0033

Date of Issue:

2015-07-29

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#### DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Previous interface for interconnection of external loudspeaker waived. The device is mechanically and electrically unchanged.



Certificate No.:

IECEx BVS 11.0033

Date of Issue:

2015-07-29

Issue No.: 2

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#### Additional information:

Intrinsically safe circuits

Maximum output power

 $\begin{array}{lll} \mbox{Headset (Speaker) (Terminal KGH No.: 7 - 8)} \\ \mbox{Maximum output voltage} & \mbox{U}_{0} & 17 \\ \mbox{Maximum output current} & \mbox{I}_{0} & 110 \\ \end{array}$ 

I<sub>o</sub> 110 mA P<sub>o</sub> 190 mW C<sub>o</sub> 375 nF

mΗ

Maximum external capacitance  $C_o$  375

Maximum external inductance  $L_o$  1.2

Headset (Signaling) (Terminal KGS No.: 9 - 10)

Ambient temperature range