



(1) **EU-TYPE EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment or Protective Systems Intended for Use in
Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 05 ATEX 2014

Issue: 2

(4) Product: Terminal box, type VKK2R-8 Ex

(5) Manufacturer: Hottinger Brüel & Kjaer GmbH

(6) Address: Im Tiefen See 45, 64293 Darmstadt, Germany

(7) This product and any acceptable variation thereto is 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 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential Test Report PTB Ex 21-21085.





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

EN IEC 60079-0:2018 EN IEC 60079-7:2015 + A1:2018 EN 60079-11:2012 EN 60079-31:2014

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

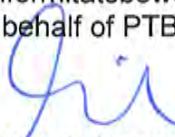
(12) The marking of the product shall include the following:

 **II 2 G Ex ia IIC T4 Gb** or  **II 2 G Ex eb IIC T4 Gb** or
 **II 2 D Ex tb IIIC T125 °C Db** or  **II 2 D Ex ia IIIC T125 °C Db**

Konformitätsbewertungsstelle Sektor Explosionsschutz

Braunschweig, June 24, 2021

On behalf of PTB:


Dr.-Ing. F. Lienesch
Direktor und Professor



SCHEDULE

(13)

(14) **EU-Type Examination Certificate Number PTB 05 ATEX 2014, Issue: 2**

(15) Description of Product

The terminal box, type VKK2R-8 Ex is a passive electrical apparatus which is intended for connection of up to 8 load cells with a minimum bridge-resistance of 348 Ω . A measuring amplifier with integrated resistor network enables corner load compensation of a balance. The terminal box is suitable for application in hazardous areas due to gas/air- or dust/air-mixtures where equipment of category 2 or 3 is required. It is operated either with an intrinsically safe circuit or with non-intrinsically safe supply.

The permissible ambient temperature range is $-20\text{ }^{\circ}\text{C} \leq T_a \leq +70\text{ }^{\circ}\text{C}$.

Electrical data

Marking: II 2 G Ex ia IIC T4 Gb or II 2 DEx ia IIIC T125 $^{\circ}\text{C}$ Db

Input, output and measuring circuits
(internal terminals)

type of protection Intrinsic Safety Ex ia IIC
Maximum values:

$$U_i = 22\text{ V}$$

$$I_i = 469\text{ mA}$$

$$P_i = 4\text{ W}$$

L_i negligibly low

C_i negligibly low

Marking: II 2 G Ex eb IIC T4 Gb

Input, output and measuring circuits

type of protection Increased Safety Ex eb IIC
Maximum values:

$$U_{\max} = 22\text{ V}$$

$$I_{\max} = 469\text{ mA}$$

$$P_{\max} = 4\text{ W}$$

(with 8 connected load cells, $R_i = 348\text{ }\Omega$)

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 05 ATEX 2014, Issue: 2

Marking: II 2 D Ex tb IIIC T125 °C Db

Input, output and measuring circuits

Protection by Enclosure Ex tb IIIC
Maximum values:

$$U_{\max} = 22 \text{ V}$$

$$P_{\text{nominal}} \text{ with } 12 \text{ V} = 4 \text{ W}$$

$$\Delta T \text{ with } P_{\text{nominal}} \leq 5 \text{ K}$$

(with 8 connected load cells (350 Ω), all compensation circuitries inactive)

All circuits are operationally grounded.

Changes with respect to previous editions

- Manufacturer changed from Hottinger Balwin Messtechnik GmbH to Hottinger Brüel & Kjaer GmbH
- New Marking Plates
- New Operating Instructions

(16) Test Report PTB Ex 21-21085

(17) Specific conditions of use

none

Notes for manufacture and operation

The terminal box shall be included in the local equipotential bonding system.

Either only intrinsically safe or only non-intrinsically safe circuits shall be connected. A combination is not permitted.

When the terminal box is operated with non-intrinsically safe circuits, the subsequent use for type of protection Intrinsic Safety is not permitted.

Equivalent cable glands from other manufacturers which are correspondingly certified may be used alternatively.



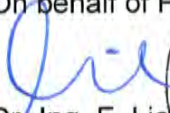
SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 05 ATEX 2014, Issue: 2

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB

Braunschweig, June 24, 2021


Dr.-Ing. F. Lienesch
Direktor und Professor





(1) **EU-TYPE EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment or Protective Systems Intended for Use in
Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 05 ATEX 2014

Issue: 1

(4) Product: Terminal box, type VKK2R-8 Ex

(5) Manufacturer: Hottinger Baldwin Messtechnik GmbH

(6) Address: Im Tiefen See 45, 64293 Darmstadt, Germany

(7) This product and any acceptable variation thereto is 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 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential Test Report PTB Ex 20-29164.





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

EN IEC 60079-0:2018 EN IEC 60079-7:2015 + A1:2018 EN 60079-11:2012 EN 60079-31:2014

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

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

 **II 2 G Ex ia IIC T4 Gb** or  **II 2 G Ex eb IIC T4 Gb** or
 **II 2 D Ex tb IIIC T125 °C Db** or  **II 2 D Ex ia IIIC T125 °C Db**

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, January 22, 2020

Dr.-Ing. F. Lienesch
Direktor und Professor



(13)

SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 05 ATEX 2014, Issue: 1**

(15) Description of Product

The terminal box, type VKK2R-8 Ex is a passive electrical apparatus which is intended for connection of up to 8 load cells with a minimum bridge-resistance of 348 Ω . A measuring amplifier with integrated resistor network enables corner load compensation of a balance. The terminal box is suitable for application in hazardous areas due to gas/air- or dust/air-mixtures where equipment of category 2 or 3 is required. It is operated either with an intrinsically safe circuit or with non-intrinsically safe supply.

The permissible ambient temperature range is $-20\text{ }^{\circ}\text{C} \leq T_a \leq +70\text{ }^{\circ}\text{C}$.

Electrical data

Marking: II 2 G Ex ia IIC T4 Gb or II 2 DEx ia IIIC T125 $^{\circ}\text{C}$ Db

Input, output and measuring circuits
(internal terminals)

type of protection Intrinsic Safety Ex ia IIC
Maximum values:

$$U_i = 22\text{ V}$$

$$I_i = 469\text{ mA}$$

$$P_i = 4\text{ W}$$

L_i negligibly low

C_i negligibly low

Marking: II 2 G Ex eb IIC T4 Gb

Input, output and measuring circuits

type of protection Increased Safety Ex eb IIC
Maximum values:

$$U_{\max} = 22\text{ V}$$

$$I_{\max} = 469\text{ mA}$$

$$P_{\max} = 4\text{ W}$$

(with 8 connected load cells, $R_i = 348\text{ }\Omega$)

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 05 ATEX 2014, Issue: 1

Marking: II 2 D Ex tb IIIC T125 °C Db

Input, output and measuring circuits

Protection by Enclosure Ex tb IIIC
Maximum values:

$$U_{\max} = 22 \text{ V}$$

$$P_{\text{nominal with 12 V}} = 4 \text{ W}$$

$$\Delta T \text{ with } P_{\text{nominal}} \leq 5 \text{ K}$$

(with 8 connected load cells (350 Ω), all compensation circuitries inactive)

All circuits are operationally grounded.

Changes with respect to previous editions

- Adaption of the test specification to the current state of standards
- The type of protection "Ex nA" is no longer applied
- The type of protection "Ex e" is updated by the type of protection "Ex eb"
- Supplementation of further cable glands as well as an introduction of a statement respecting the use of equivalent cable glands
- Compilation of a list of currently valid technical documents
- Adaption of the safety instructions respecting the modifications performed

(16) Test Report PTB Ex20-29164

(17) Specific conditions of use

none

Notes for manufacture and operation

The terminal box shall be included in the local equipotential bonding system.

Either only intrinsically safe or only non-intrinsically safe circuits shall be connected. A combination is not permitted.

When the terminal box is operated with non-intrinsically safe circuits, the subsequent use for type of protection Intrinsic Safety is not permitted.

Equivalent cable glands from other manufacturers which are correspondingly certified may be used alternatively.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 05 ATEX 2014, Issue: 1

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

According to Article 41 of Directive 2014/34/EU, EC-type examination certificates which have been issued according to Directive 94/9/EC prior to the date of coming into force of Directive 2014/34/EU (April 20, 2016) may be considered as if they were issued already in compliance with Directive 2014/34/EU. By permission of the European Commission supplements to such EC-type examination certificates and new issues of such certificates may continue to hold the original certificate number issued before April 20, 2016.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, January 22, 2020


Dr.-Ing. F. Lienesch
Direktor und Professor









3. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2014

(Translation)

Equipment: Terminal box, type VKK2R-8Ex

Marking:  II 2 G Ex ia IIC T4 bzw.  II 2 G Ex e II T4 bzw.
 II 3 G Ex nA IIC T4 bzw.
 II 2 D Ex iaD 21 T 80 °C bzw.  II 2 D Ex tD A21 IP65 T 80 °C
 II 3 D Ex tD A22 IP65 T 80 °C






Manufacturer: Hottinger Baldwin Messtechnik

Address: Im Tiefen See 45, 64293 Darmstadt, Germany

Description of supplements and modifications

In the future the terminal box, type VKK2R-8Ex may also be manufactured and operated according to the test documents listed in the test report. The modifications concern the adaption to the current state of the standards and hence the marking of the equipment which, in future, will also include the specification of the EPL. Furthermore, the maximum surface temperature specified in the dust marking is extended from T80 °C to T125 °C. The equipment was not subjected to technical modifications.

In the future the marking of the equipment will read:

 II 2 G Ex ia IIC T4 Gb or  II 2 G Ex e IIC T4 Gb or
 II 3 G Ex nA IIC T4 Gc or
 II 2 D Ex ia IIIC T125 °C Db or  II 2 D Ex tb IIIC T125 °C Db

The electrical data are changed as follows:

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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.

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2014

Marking: Ex ia IIC T4 Gb, Ex ia IIIC T125 °C Db

Input/output and measuring circuits (internal terminal clamps) type of protection Intrinsic Safety Ex ia IIC

Maximum values:
 $U_i = 22 \text{ V}$
 $I_i = 469 \text{ mA}$
 $P_i = 4 \text{ W}$
 L_i negligibly low
 C_i negligibly low

Marking: Ex e IIC T4 Gb

Input/output and measuring circuits (63 internal terminal clamps) type of protection Increased Safety Ex e IIC

$U_{\max} = 22 \text{ V}$
 $I_{\max} = 469 \text{ mA}$
 $P_{\max} = 4 \text{ W}$
cross section: up to 2,5 mm² resp. 1,5 mm²

Marking: Ex nA IIC T4 Gc, Ex tb IIIC T125 °C Db

Input/output and measuring circuits type of protection Increased Safety Ex nA IIC / tb IIIC

$U_{\max} = 22 \text{ V}$
 $P_{\max} = 4 \text{ W}$ (with 8 connected load cells (350 Ω),
all compensation circuitries inactive)

All circuits are operationally grounded.

The notes for manufacture and operation as well as all further specifications of the EC-type examination certificate and the 1st and 2nd supplement apply without changes also to this 3rd supplement.

Applied standards

EN 60079-0:2012
EN 60079-31:2014

EN 60079-7:2007

EN 60079-11:2012

EN 60079-15:2010

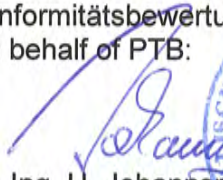


3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2014

Test report: PTB Ex 14-23116

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, Januar 12, 2015


Dr.-Ing. U. Johannsmeyer
Direktor und Professor



2. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2014

(Translation)

Equipment: Terminal box, type VKK2R-8 Ex

Marking: $\text{\textcircled{Ex}}$ II 2 G EEx ia IIC T4 or $\text{\textcircled{Ex}}$ II 3 G EEx nA IIC T4 or
 $\text{\textcircled{Ex}}$ II 2 G EEx e II T4 or
 $\text{\textcircled{Ex}}$ II 2 D IP65 T 80 °C or $\text{\textcircled{Ex}}$ II 3 D IP65 T 80 °C

Manufacturer: Hottinger Baldwin Messtechnik

Address: Im Tiefen See 45
64293 Darmstadt, Germany

Description of supplements and modifications

In the future the terminal box, type VKK2R-8 Ex may also be manufactured according to the test documents listed in the test report. The modifications concern the introduction of the type of protection Intrinsic Safety "iD" for the application in hazardous areas due to combustible dusts as well as the adaption to the current state of the standard series EN 60079-et seq. and, therefore, the marking of the equipment.

This reads in future:

Marking: $\text{\textcircled{Ex}}$ II 2 G Ex ia IIC T4 or $\text{\textcircled{Ex}}$ II 2 G Ex e II T4 or
 $\text{\textcircled{Ex}}$ II 3 G Ex nA IIC T4 or
 $\text{\textcircled{Ex}}$ II 2 D Ex iaD 21 T 80 °C or $\text{\textcircled{Ex}}$ II 2 D Ex tD A21 IP65 T 80 °C
 $\text{\textcircled{Ex}}$ II 3 D Ex tD A22 IP65 T 80 °C

The electrical data and all other specifications and notes given in the EC-type examination certificate and the 1st supplement apply without changes also to this 2nd supplement.


Applied standards

EN 60079-0:2006	EN 60079-7:2007	EN 60079-11:2007	EN 60079-15:2005
EN 61241-0:2006	EN 61241-1:2004	EN 61241-11:2006	

Assessment and test report: PTB Ex 09-29121

Zertifizierungssektor Explosionsschutz
By order:

Braunschweig, September 23, 2009


Dr.-Ing. U. Johannsmeyer
Direktor und Professor



1. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2014

(Translation)

Equipment: Terminal box, type VKK2R-8 Ex

Marking: Ex II 2 G EEx ia IIC T4 or Ex II 3 G EEx nA IIC T4
 Ex II 2 D IP65 T 80 °C or Ex II 3 D IP65 T 80 °C

Manufacturer: Hottinger Baldwin Messtechnik

Address: Im Tiefen See 45
64293 Darmstadt, Germany

Description of supplements and modifications

In the future the terminal box may also be manufactured and operated in accordance with type of protection Increased Safety "e".

The marking for this application is: Ex II 2 G EEx e II T4

The maximum permissible ambient temperature is + 70 °C.

The electrical data change as follows:

Electrical data

Marking: II 2 G EEx e II T4

Input/output and
measuring circuits

type of protection Increased Safety EEx e II

$U_{\max} = 12 \text{ V}$

$I_{\max} = 350 \text{ mA}$

$P_{\max} = 4 \text{ W}$

(63 internal terminal clamps)

cross section: up to 2,5 mm² resp. 1,5 mm²

All further specifications and notes of the EC-type examination certificate apply without changes.

Applied standards

EN 50014:1997 + A1 + A2 EN 50281-1-1:1998	EN 50019:2000	EN 50020:2002	EN 50021:1999
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Test report: PTB Ex 05-25222

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, September 16, 2005

Dr.-Ing. U. Johannsmeyer
Direktor und Professor





(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 05 ATEX 2014

(4) Equipment: Terminal box, type VKK2R-8 Ex

(5) Manufacturer: Hottinger Baldwin Messtechnik

(6) Address: Im Tiefen See 45
64293 Darmstadt, 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 05-24403 .

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50014:1997 + A1 + A2 EN 50020:2002 EN 50021:1999 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 EEx ia IIC T4 or II 3 G EEx nA IIC T4
II 2 D IP65 T 80 °C or II 3 D IP65 T 80 °C

Zertifizierungsstelle Explosionschutz
By order:

Braunschweig, February 21, 2005

Dr.-Ing. U. Gerlach
Regierungsrat



sheet 1/3

SCHEDULE

(13)

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2014

(15) Description of equipment

The terminal box, type VKK2R-8 Ex is a passive electrical apparatus which is intended for connection of up to 8 load cells with a bridge-resistance of $\geq 350 \Omega$. A resistor network makes it possible to adjust the load cell's individual parameter (sensitivity). The terminal box is suitable for application in hazardous areas due to gas/air- or dust/air-mixtures where equipment of category 2 or 3 is required. It is operated either with an intrinsically safe circuit or with non-intrinsically safe supply.

The maximum permissible ambient temperature is $+ 70 \text{ }^\circ\text{C}$.

Electrical data

Marking: II 2 G EEx ia IIC T4

Input/output and
measuring circuits
(internal terminal clamps)

type of protection Intrinsic Safety EEx ia IIC

$U_i = 22 \text{ V}$

$I_i = 469 \text{ mA}$

$P_i = 1835 \text{ mW}$

L_i negligibly low

C_i negligibly low

Marking: II 3 G EEx nA IIC T4 or II 2 D 3 D IP65 T 80 °C

Supply voltage

$U_{\max} = 12 \text{ V}$

All circuits are operationally grounded.

(16) Test report PTB Ex 05-24403

(17) Special conditions for safe use

none

Notes for manufacture and operation

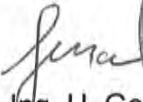
1. The terminal box shall be included in the local equipotential bonding system.
2. Either only intrinsically safe or only non-intrinsically safe circuits shall be connected. A combination is not permitted.
3. When the terminal box is operated with non-intrinsically safe circuits, the subsequent use for type of protection Intrinsic Safety is not permitted.

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(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz
By order:


Dr.-Ing. U. Gerlach
Regierungsrat



Braunschweig, February 21, 2005