Certificates

Device version KB2, incl. HSG

KB2 Keyboards
PD2 Pointing device
KB2-HSG / PD2-HSG Assemblies

STAHL
THE STRONGEST LINK.

HW-Rev.: **01.01.02**

Certificates version: **01.01.02**
Issue date: **03.06.2025**

Disclaimer

Publisher and copyright holder:

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Table of contents

1 Preface

	This document contains all valid certificates for the KB2 product line up from HW-Rev. 01.01.02. All technical details contained in the EC type examination certificate are also part of the associated operating instructions. All certificates are also available on r-stahl.com, on the USB stick included in the delivery or a copy can also be ordered from R. STAHL HMI Systems GmbH.

2 ATEX EC type examination certificate

2.1 KB2 / PD2 - Z1

Translation

1 **EU-Type Examination Certificate**

2 **Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014**

3 EU-Type Examination Certificate Number: **BVS 20 ATEX E 078 X** Issue: **01**

4 Equipment:

Keyboard with pointing device	**type KB2-Z1-CCC-DD-EE-F-***
Pointing device	**type PD2-Z1-CCC-DD-EE-F-***
Keyboard matrix interface	**type KM2-Z1-CCC-DD-EE-F-***

5 Manufacturer: **R. STAHL HMI Systems GmbH**

6 Address: **Adolf-Grimme Allee 8, 50829 Köln, Germany**

7 This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of 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 Report No. BVS PP 20.2125 EU.

This issue of the EU-Type Examination Certificate replaces the previous issue of the EU-Type Examination Certificate BVS 20 ATEX E 078 X.

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

EN IEC 60079-0:2018	**General requirements**
EN 60079-11:2012	**Intrinsic Safety "i"**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed under item 17 of this certificate.

11 This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance with 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 2G Ex ia IIC T4 Gb **II 2D Ex ia IIIC T_{200} 135°C Db**	(When connected to an ia-circuit)
II 2G Ex ib IIC T4 Gb **II 2D Ex ib IIIC T_{200} 135°C Db**	(When connected to an ib-circuit)
II 3G Ex ic IIC T4 Gc **II 3D Ex ic IIIC T_{200} 135°C Dc**	(When connected to an ic-circuit)

DEKRA Testing and Certification GmbH
Bochum, 2024-04-16

Signed: Oliver Brumm

Managing Director

Page 1 of 6 of BVS 20 ATEX E 078 X issue 01 – Jobnumber A 20240209 / 343344900
This certificate may only be reproduced in its entirety and without any change.

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13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 20 ATEX E 078 X issue 01

15 **Product description**

15.1 **Subject and type**

Types **AAA-BB-CCC-DD-EE-F-***
In the complete type denomination, the wild cards A-F are replaced by the following characters and numbers to distinguish different variants.

AAA:	**Type**
KB2	Keyboard with pointing device
PD2	Pointing device only
KM2	Keyboard matrix interface

BB:	**Zone**
Z1	For use in Zone 1, 2, 21, 22

CCC: **Type of interface** (not Ex-relevant)

DD:	**Type of pointing device**
00	No pointing device
TB	Trackball
TP	Touchpad
JS	Joystick

EE:	**Front plate material**
AP	Aluminium coated
AL	Aluminium anodized
V2	Stainless steel
V4	Stainless steel
ST	Steel

F:	**Surface front foil**
P	Polyester foil
V	Metallic foil

The * is replaced by characters and numbers to distinguish variations with no influence to explosion protection.

15.2 **Description**

Reason for this issue:

The internal electronics was partly modified, the parameters are unchanged.

Description of equipment:

The Human Interface Devices (HIDs) KB2-Z1-…, PD2-Z1-… and KM2-Z1-… are used for connection to PCs or similar devices in hazardous areas.

The HIDs are intrinsically safe apparatus.
They are suitable for use in areas requiring EPL Gb or Db. They have level of protection ia, when connected to an ia-circuit. When connected to an ib-circuit, they have level of protection ib. When connected to an ic-circuit, they have level of protection ic and are suitable for areas requiring EPL Gc or Dc.

The Keyboards type KB2-Z1-… and the Pointing Devices type PD2-Z1-… are intended for installation into a control board or for installation into a suitable cutout of an external enclosure. They have a metallic front plate with switches and control elements as joystick, trackball or touchpad.

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The electronic is placed behind the front plate. The backside of the apparatus is open (no enclosure).

The installation depends on the use:

- For use in Group II:
  The devices have to be installed in such a way that at least IP20 according to EN 60529 is ensured for the backside.
- For use in Group III:
  The devices have to be installed in such a way that at least IP64 according EN IEC 60079-0 is ensured for the backside.
  When supplied with maximum current > 250 mA:
  The devices must be supplied by an ia-circuit (linear characteristics).
- Installation in t, e, p:
  The devices are suitable for installation into the cutout of an enclosure with IP64 according to EN IEC 60079-0 resp. into the cutout of an enclosure type of protection Ex eb resp. ec or Ex tb resp. tc or Ex p. They fulfil the respective enclosure requirements.

The devices are supplied via a permanently connected cable with max. 5 m length.

The Keyboard Matrix Interfaces Type KM2-Z1-… are intended for connection of an external keyboard.
They consist of a metallic enclosure with inner electronics.
The connection is done via external terminals.
The enclosure has IP20 according to EN 60529.

- For use in Group III:
  The devices have to be installed in such a way that at least IP64 according EN IEC 60079-0 is ensured for the backside.
  When supplied with maximum current > 250 mA:
  The devices must be supplied by an ia-circuit (linear characteristics).

15.3 **Parameters**

15.3.1 **Electrical Parameters**

15.3.1.1 **Type PD2-Z1-***-**-**-*-*:**
(Pointing device)

Supply
via a permanently connected cable with max. 5 m length

Wires
for 8-wire cable: +5V (red resp. 5), USB-m (grey resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)
for 4-wire cable: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

15.3.1.2 **Type KB2-Z1-***-00-**-*-*:**
(Keyboard without Pointing Device)

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Supply
via a permanently connected cable with max. 5 m length

Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

15.3.1.3 **Type KB2-Z1-***-TB-**-*-*,**
Type KB2-Z1-*-TP-**-*-*,**
Type KB2-Z1-*-JS-**-*-*:**
(Keyboard with Pointing Device)

Supply with 2 separate intrinsically safe circuits
via an 8-wire permanently connected cable with max. 5 m length

15.3.1.3.1 Keyboard-circuit

Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

15.3.1.3.2 Pointing Device-Circuit

Wires +5V (red resp. 5), USB-m (grey resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

15.3.1.4 Type **KM2-Z1-***-**-**-*-*:**
(Keyboard Matrix)

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Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

15.3.1.4.1 Supply
Terminal block X1
Terminals +5V (1), USB_m (2), USB_p (3), GND (4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		20.5	µF
Effective internal inductance	L_i		1.68	µH

Terminal 5 is intended for connection of a cable shield.

15.3.1.4.2 Terminals for connection of an external keyboard:
Terminal blocks X2, X3, X4:
(The signals at all 3 terminal blocks are regarded as 1 intrinsically safe circuit)

Maximum output voltage	U_o	= U_i	
Maximum output current	I_o	250	mA
Maximum output power	P_o	= P_i	
Maximum external capacitance	C_o	0.5	µF
Maximum external inductance	L_o	0.5	µH

15.3.2 **Thermal parameters**

Ambient temperature T_a -40 °C ... +70 °C
resp. temperature at the place of installation

Further details are part of the manual.

16 **Report Number**

BVS PP 20.2125 EU, as of 2024-04-16

17 **Specific Conditions of Use**

17.1 Type KB2-Z1-... and type PD2-Z1-...:
For use in gas-explosive areas, the devices must be installed in a suitable enclosure to obtain at least IP20 in accordance with IEC 60529.

17.2 Type KB2-Z1-... and type PD2-Z1-... and KM2-Z1-...:
When used in dust-explosive areas, the device has to be installed in a suitable enclosure to obtain at least IP64 in accordance with EN IEC 60079-0.

When supplied with > 250 mA in dust-explosive areas:
The device must be supplied by an ia-circuit (linear characteristics).

17.3 Type KB2-Z1-***-TB-**-*-* and type KB2-Z1-***-TP-**-*-* and type KB2-Z1-***-JS-**-*-*:
The connection cable contains 2 separate intrinsically safe circuits.
The device has to be installed in such a way that mechanical effects (pulling forces) on the cable are excluded.
The cable has to be fixed and effectively protected against damage.

17.4 The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.

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18 **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

19 **Remarks and additional information**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2024-04-16
BVS-Rip/Mu A 20240209 / 343344900

Managing Director

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2.2 KB2 / PD2 – Z2

Translation

1 **Type Examination Certificate**

2 **Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014**

3 Type Examination Certificate Number: **BVS 20 ATEX E 079 X** Issue: **01**

4 Equipment:

Keyboard with pointing device	**type KB2-Z2-CCC-DD-EE-F-***
Pointing device	**type PD2-Z2-CCC-DD-EE-F-***
Keyboard matrix interface	**type KM2-Z2-CCC-DD-EE-F-***

5 Manufacturer: **R. STAHL HMI Systems GmbH**

6 Address: **Adolf-Grimme Allee 8, 50829 Köln, Germany**

7 This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH 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 Report No. BVS PP 20.2125 EU.

This issue of the Type Examination Certificate replaces the previous issue of the Type Examination Certificate BVS 20 ATEX E 079 X.

9 The Essential Health and Safety Requirements are assured in consideration of:

EN IEC 60079-0:2018	**General requirements**
EN 60079-11:2012	**Intrinsic Safety "i"**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed under item 17 of this certificate.

11 This Type Examination Certificate relates only to the design and construction of the specified product. 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 3G Ex ic IIC T4 Gc
II 3D Ex ic IIIC T_{200} 135°C Dc

DEKRA Testing and Certification GmbH
Bochum, 2024-04-16

Signed: Oliver Brumm

Managing Director

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13 **Appendix**

14 **Type Examination Certificate**

BVS 20 ATEX E 079 X Issue 01

15 **Product description**

15.1 **Subject and type**

Types **AAA-BB-CCC-DD-EE-F-***
In the complete type denomination, the wild cards A-F are replaced by the following characters and numbers to distinguish different variants.

AAA:	**Type**
KB2	Keyboard with pointing device
PD2	Pointing device only
KM2	Keyboard matrix interface
BB:	**Zone**
Z2	For use in Zone 2, 22
CCC:	**Type of interface** (not Ex-relevant)
DD:	**Type of pointing device**
00	No pointing device
TB	Trackball
TP	Touchpad
JS	Joystick
EE:	**Front plate material**
AP	Aluminium coated
AL	Aluminium anodized
V2	Stainless steel
V4	Stainless steel
ST	Steel
F:	**Surface front foil**
P	Polyester foil
V	Metallic foil

The * is replaced by characters and numbers to distinguish variations with no influence to explosion protection.

15.2 **Description**

Reason for this issue:

The internal electronics was partly modified, the parameters are unchanged.

Description of equipment:

The Human Interface Devices (HIDs) KB2-Z2-…, PD2-Z2-… and KM2-Z2-… are used for connection to PCs or similar devices in hazardous areas.

The HIDs are intrinsically safe apparatus.
They are suitable for use in areas requiring EPL Gc or Dc.

The Keyboards type KB2-Z2-… and the Pointing Devices type PD2-Z2-… are intended for installation into a control board or for installation into a suitable cutout of an external enclosure. They have a metallic front plate with switches and control elements as joystick, trackball or touchpad.
The electronic is placed behind the front plate. The backside of the apparatus is open (no enclosure).

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The installation depends on the use:

- For use in Group II:
  The devices have to be installed in such a way that at least IP20 according to EN 60529 is ensured for the backside.
- For use in Group III:
  The devices have to be installed in such a way that at least IP64 according EN IEC 60079-0 is ensured for the backside.
- Installation in t, e, p:
  The devices are suitable for installation into the cutout of an enclosure with IP64 according to EN IEC 60079-0 resp. into the cutout of an enclosure type of protection Ex ec or Ex tc or Ex pzc. They fulfil the respective enclosure requirements.

The devices are supplied via a permanently connected cable with max. 5 m length.

The Keyboard Matrix Interfaces Typ KM2-Z2-… are intended for connection of an external keyboard.
They consist of a metallic enclosure with inner electronics.
The connection is done via external terminals.
The enclosure has IP20 according to EN 60529.

- For use in Group III:
  The devices have to be installed in such a way that at least IP64 according EN IEC 60079-0 is ensured for the backside.

15.3 **Parameters**

15.3.1 Electrical parameters

15.3.1.1 **Type PD2-Z2-***-**-**-*-*:**
(Pointing device)

Supply
via a permanently connected cable with max. 5 m length

Wires
for 8-wire cable: +5V (red resp. 5), USB-m (grey resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)
for 4-wire cable: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

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15.3.1.2 **Type KB2-Z2-***-00-**-*-*:**
(Keyboard without Pointing Device)

Supply
via a permanently connected cable with max. 5 m length

Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

15.3.1.3 **Type KB2-Z2-***-TB-**-*-*,**
Type KB2-Z2-*-TP-**-*-*,**
Type KB2-Z2-*-JS-**-*-*:**
(Keyboard with Pointing Device)

Supply with 2 separate intrinsically safe circuits
via an 8-wire permanently connected cable with max. 5 m length

15.3.1.3.1 Keyboard-circuit

Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

15.3.1.3.2 Pointing Device-Circuit

Wires +5V (red resp. 5), USB-m (grey resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

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15.3.1.4 Type **KM2-Z2-***-**-**-*-*:**
(Keyboard Matrix)

15.3.1.4.1 Supply
Terminal block X1
Terminals +5V (1), USB_m (2), USB_p (3), GND (4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		20.5	µF
Effective internal inductance	Li		1.68	µH

Terminal 5 is intended for connection of a cable shield.

15.3.1.4.2 Terminals for connection of an external keyboard:
Terminal blocks X2, X3, X4:
(The signals at all 3 terminal blocks are regarded as 1 intrinsically safe circuit)

Maximum output voltage	U_o	= U_i	
Maximum output current	I_o	250	mA
Maximum output power	P_o	= P_i	
Maximum external capacitance	C_o	0.5	µF
Maximum external inductance	L_o	0.5	µH

15.3.2 Thermal parameters

Ambient temperature resp. temperature at the place of installation	T_a	-40 °C … +70 °C

Further details are part of the manual.

16 **Report Number**

BVS PP 20.2125 EU, as of 2024-xx-xx

17 **Specific Conditions of Use**

17.1 Type KB2-Z2-… and type PD2-Z2-…:
For use in gas-explosive areas, the devices must be installed in a suitable enclosure to obtain at least IP20 in accordance with IEC 60529.

17.2 Type KB2-Z2-… and type PD2-Z2-… and KM2-Z2-…:
When used in dust-explosive areas, the device has to be installed in a suitable enclosure to obtain at least IP64 in accordance with EN IEC 60079-0.

17.3 Type KB2-Z2-***-TB-**-*-* and type KB2-Z2-***-TP-**-*-* and type KB2-Z2-***-JS-**-*-*:
The connection cable contains 2 separate intrinsically safe circuits.
The device has to be installed in such a way that mechanical effects (pulling forces) on the cable are excluded.
The cable has to be fixed and effectively protected against damage.

17.4 The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.

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18 **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

19 **Remarks and additional information**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2024-04-16
BVS-Rip/Mu A 20240211 / 343345100

Managing Director

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2.3 KB2 / PD2 - Z1-*-HSG*00* / *U3*

Translation

1 # EU-Type Examination Certificate

2 **Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014**

3 EU-Type Examination Certificate Number: **BVS 20 ATEX E 106 X** Issue: **01**

4 Equipment: **Keyboard with pointing device and enclosure type KB2- Z1-CCC-DD-EE-F-GG-HSG H II J KKK L MM * or only Pointing device type PD2- Z1-CCC-DD-EE-F-GG-HSG H II J KKK L MM ***

5 Manufacturer: **R. STAHL HMI Systems GmbH**

6 Address: **Adolf-Grimme Allee 8, 50829 Köln, Germany**

7 This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of 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 Report No. BVS PP 20.2171 EU.
This issue of the EU-Type Examination Certificate replaces the previous issue of the EU-Type Examination Certificate BVS 20 ATEX E 106 X.

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

EN IEC 60079-0:2018	**General requirements**
EN 60079-5:2015	**Powder filling „q“**
EN IEC 60079-7:2015 + A1:2018	**Increased Safety “e”**
EN 60079-11:2012	**Intrinsic Safety “i”**
EN 60079-31:2014	**Protection by Enclosure “t”**

10 If the sign “X” is placed after the certificate number, it indicates that the product is subject to the “Specific Conditions of Use” listed under item 17 of this certificate.

11 This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance with 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:

Type KB2-Z1-…-HSG…00	**when connected to**	**II 2G Ex ia IIC T4 Gb**
Type PD2-Z1-…-HSG…00…	**an ia-circuit**	**II 2D Ex ia IIIC T_{200} 135°C Db**
	when connected to	**II 2G Ex ib IIC T4 Gb**
	an ib-circuit	**II 2D Ex ib IIIC T_{200} 135°C Db**
Type KB2-Z1-…-HSG…U3…	**when connected to**	**II 2G Ex eb ia q IIC T4 Gb**
Type PD2-Z1-…-HSG…U3…	**an ia-circuit**	**II 2D Ex ia tb IIIC 135°C Db**
	when connected to	**II 2G Ex eb ib q IIC T4 Gb**
	an ib-circuit	**II 2D Ex ib tb IIIC 135°C Db**

DEKRA Testing and Certification GmbH
Bochum, 2024-04-16

Signed: Oliver Brumm

Managing Director

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13 **Appendix**

14 **EU-Type Examination Certificate**

BVS 20 ATEX E 106 X issue 01

15 **Product description**

15.1 **Subject and type**

Keyboard with pointing device and enclosure or Pointing Device only types AAA-BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM *

In the complete type denomination, the wild cards A-M are replaced by the following characters and numbers to distinguish different variants:

AAA:	**Type**
KB2	Keyboard with Pointing Device
PD2	Pointing device only
BB:	**Zone**
Z1	For use in Zone 1, 2, 21, 22
CCC:	**Type of interface** (not Ex-relevant)
DD:	**Type of pointing device**
00	no pointing device
TB	Trackball
TP	Touchpad
JS	Joystick
EE:	**Front plate material**
AP	Aluminium coated
AL	Aluminium anodized
V2	Stainless steel
V4	Stainless steel
ST	Steel
F:	**Surface front foil**
P	Polyester foil
V	Metallic foil
GG:	**Layout** (not Ex-relevant)
HSG:	**Housing**
H:	**Sealing**
1	Sealing 1
2	Sealing 2
II:	**Housing material**
V2	Housing material V2A
V4	Housing material V4A
J:	**Coating**
N	no coating (natural or eloxal)
P	Coating
M	Metallic coating
KKK:	**Mounting option**
M##	Mounting options
B##	Back cover
L:	**Design option** (not Ex-relevant)
MM:	**Accessory**
00	without accessory
U3	UB03

The * and # are replaced by characters and numbers to distinguish variations with no influence on explosion protection.

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15.2 **Description**

Reason for this issue:

The Keyboard / Pointing Device, certified in BVS 20 ATEX E 078 X issue 01, IECEx BVS 20.0065X issue 01, can be optionally used.

Description of equipment:

The Keyboard with pointing device and enclosure and the Pointing Device (Human interface devices) are used for connection to PCs or similar devices in hazardous areas.

The separately certified Keyboard / Pointing Device (BVS 20 ATEX E 078 X issue 01, IECEx BVS 20.0065X issue 01) is mounted in a housing in which the already certified Universal Box type UB03-Z*-* (BVS 18 ATEX E 001, IECEx BVS 18.0001) may be installed optionally.

Variant KB2-Z1-HSG*00* or PD2-Z1-HSG*00*:
The Keyboard / Pointing Device is carried out in type of protection Intrinsic Safety "i".
The variants KB2-Z1-… and PD2-Z1-… are suitable for use in areas requiring EPL Gb or Db.
They have level of protection ia, when connected to an ia-circuit. When connected to an ib-circuit, they have level of protection ib.
The Keyboards type KB2-Z1… and the Pointing Devices type PD2-Z1… have a metallic front plate with switches and control elements as joystick, trackball or touchpad.
The electronic is placed behind the front plate.
The devices are supplied via a permanently connected cable with max. 5 m length.

Supplementary to Variant KB2-Z1-HSG*U3* or PD2-Z1-HSG*U3*:
The Universal Box type UB03-Z1-* is carried out in type of protection "eb q" and "tb" and is suitable for use in areas requiring EPL Gb or Db.
Variants KB2-Z1-HSG*U3* or PD2-Z1-HSG*U3* are additionally supplied via a terminal box in type of protection Increased Safety "e" as part of the Universal Box.

15.3 **Parameters**

15.3.1 **Electrical parameters**

15.3.1.1 **Type PD2-**-***-**-**-*-**-HSG * ** * *** * ** *;**
(Pointing device)

Supply
via a permanently connected cable with max. 5 m length

Wires
for 8-wire cable: +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)
for 4-wire cable: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

15.3.1.2 **Type KB2-**-***-00-**-*-**-HSG * ** * *** * ** *:**
(Keyboard without Pointing Device)
Supply via a permanently connected cable with max. 5 m length
Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

15.3.1.3 **Type KB2-**-***-TB-**-*-**-HSG * ** * *** * ** ***
Type KB2--***-TP-**-*-**-HSG * ** * *** * ** ***
Type KB2--***-JS-**-*-**-HSG * ** * *** * ** ***
(Keyboard with Pointing Device)

Supply with 2 separate intrinsically safe circuits
via an 8-wire permanently connected cable with max. 5 m length

15.3.1.3.1 Keyboard-circuit

Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

15.3.1.3.2 Pointing Device-Circuit

Wires +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

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15.3.1.4 **Type ***-**-***-**-**-*-**-HSG * ** * *** * U3 *:**
(Accessory UB03)

15.3.1.4.1 Terminal block X1, pin1
Non-intrinsically safe supply circuit (Power)

Nominal voltage		DC	5…30	V
Nominal current		≤	1	A
Nominal power		≤	30	W
Max. input voltage	U_m	AC	250	V

Terminal block X1, pin 2 and 3
Non-intrinsically safe interfaces data

Nominal voltage		AC/DC	5	V
Max. input voltage	U_m	AC	250	V

Terminal block X1, pin 2 and 3 (for "UB03-*-RFID-*-RS422*" only)
Non-intrinsically safe interfaces data

Max. voltage		AC/DC	30	V
Max. current		≤	1	A

Terminal block X1, pin 2 and 3 (for "UB03-*-AMP-Audio*" and "UB03-*-DSP-10*" only)
Non-intrinsically safe interfaces data

Max. output voltage		AC/DC	30	V

15.3.1.4.2 Terminal block X2
Non-intrinsically safe interfaces data

Nominal voltage		AC/DC	5	V
Max. input voltage	U_m	AC	250	V

15.3.2 **Thermal parameters**

Ambient temperature or temperature at the place of installation	T_a	-40 °C ... +70 °C

16 **Report Number**

BVS PP 20.2171 EU, as of 2024-04-16

17 **Specific Conditions of Use**

17.1 Type KB2-… and type PD2-… :
When supplied with > 250 mA in dust-explosive areas:
The device must be supplied by an ia-circuit (linear characteristics).

17.2 Type KB2-Z1-***-TB-**-*-**-HSG * ** * *** * ** *;
Type KB2-Z1-***-TP-**-*-**-HSG * ** * *** * ** *;
Type KB2-Z1-***-JS-**-*-**-HSG * ** * *** * ** *;
The connection cable contains 2 separate intrinsically safe circuits.
The device has to be installed in such a way that mechanical effects (pulling forces) on the cable are excluded.
The cable has to be fixed and effectively protected against damage.

17.3 The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.

17.4 The enclosure, must be connected to earth potential with max. 1 MΩ. If applicable, the mounting components or the earth of mounted components can be used for this.

17.5 For the variants KB2-Z1-HSG*U3* or PD2-Z1-HSG*U3* a connecting cable with min. 0.5 mm insulation (conductor / outer sheath) must be used for the UB03 connection. The connecting cable must be installed in the housing in such a way that a distance of min. 50 mm to bare conductive parts of the keyboard / pointing device is ensured.

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18 **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

19 **Remarks and additional information**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2024-04-16
BVS-Rip/Mu A 20240213 / 343345600

Managing Director

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2.4 KB2 / PD2 – Z2-*-HSG*00* / *U3*

Translation

1 **Type Examination Certificate**

2 **Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014**

3 Type Examination Certificate Number: **BVS 20 ATEX E 107 X** Issue: **01**

4 Equipment: **Keyboard with pointing device and enclosure type KB2- Z2-CCC-DD-EE-F-GG-HSG H II J KKK L MM * or only Pointing device type PD2- Z2-CCC-DD-EE-F-GG-HSG H II J KKK L MM ***

5 Manufacturer: **R. STAHL HMI Systems GmbH**

6 Address: **Adolf-Grimme Allee 8, 50829 Köln, Germany**

7 This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH 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 Report No. BVS PP 20.2171 EU.
This issue of the Type Examination Certificate replaces the previous issue of the Type Examination Certificate BVS 20 ATEX E 107 X.

9 The Essential Health and Safety Requirements are assured in consideration of:

EN IEC 60079-0:2018	**General requirements**
EN IEC 60079-7:2015 + A1:2018	**Increased Safety "e"**
EN 60079-11:2012	**Intrinsic Safety "i"**
EN 60079-15:2010	**Type of Protection "n"**
EN 60079-31:2014	**Protection by Enclosure "t"**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed under item 17 of this certificate.

11 This Type Examination Certificate relates only to the design and construction of the specified product. 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:

Type KB2-Z2-...-HSG...00 **Type PD2-Z2-...-HSG...00...**	**II 3G Ex ic IIC T4 Gc** **II 3D Ex ic IIIC T_{200} 135°C Dc**
Type KB2-Z2-...-HSG...U3... **Type PD2-Z2-...-HSG...U3...**	**II 3G Ex ec ic nC IIC T4 Gc** **II 3D Ex ic tc IIIC 135°C Dc**

DEKRA Testing and Certification GmbH
Bochum, 2024-04-16

Signed: Oliver Brumm

Managing Director

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13 **Appendix**

14 **Type Examination Certificate**

BVS 20 ATEX E 107 X Issue 01

15 **Product description**

15.1 **Subject and type**

Keyboard with pointing device and enclosure or Pointing Device only
Types AAA-BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM *

In the complete type denomination, the wild cards A-M are replaced by the following characters and numbers to distinguish different variants:

AAA:	**Type**
KB2	Keyboard with Pointing Device
PD2	Pointing device only
BB:	**Zone**
Z2	For use in Zone 2, 22
CCC:	**Type of interface** (not Ex-relevant)
DD:	**Type of pointing device**
00	no pointing device
TB	Trackball
TP	Touchpad
JS	Joystick
EE:	**Front plate material**
AP	Aluminium coated
AL	Aluminium anodized
V2	Stainless steel
V4	Stainless steel
ST	Steel
F:	**Surface front foil**
P	Polyester foil
V	Metallic foil
GG:	**Layout** (not Ex-relevant)
HSG:	**Housing**
H:	**Sealing**
1	Sealing 1
2	Sealing 2
II:	**Housing material**
V2	Housing material V2A
V4	Housing material V4A
J:	**Coating**
N	no coating (natural or eloxal)
P	Coating
M	Metallic coating
KKK:	**Mounting option**
M##	Mounting options
B##	Back cover
L:	**Design option** (not Ex-relevant)
MM:	**Accessory**
00	without accessory
U3	UB03

The * and # are replaced by characters and numbers to distinguish variations with no influence to explosion protection.

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15.2 **Description**

Reason for this issue:

The Keyboard / Pointing Device, certified in BVS 20 ATEX E 079 X issue 01, IECEx BVS 20.0065X issue 01, can be optionally used.

Description of equipment:

The Keyboard with Pointing Device and enclosure and the Pointing Device (Human interface devices) are used for connection to PCs or similar devices in hazardous areas.

The separately certified Keyboard / Pointing device (BVS 20 ATEX E 079 X issue 01, IECEx BVS 20.0065X issue 01) is mounted in a housing in which the already certified Universal Box type UB03-Z*-* (BVS 18 ATEX E 002, IECEx BVS 18.0001) may be installed optionally.

Variant KB2-Z2-HSG*00* or PD2-Z1-HSG*00*:
The Keyboard / Pointing Device is carried out in type of protection Intrinsic Safety "i".
The variants KB2-Z2-… and PD2-Z2-… are suitable for use in areas requiring EPL Gc or Dc.
The Keyboards type KB2-Z2… and the Pointing Devices type PD2-Z2… have a metallic front plate with switches and control elements as joystick, trackball or touchpad.
The electronic is placed behind the front plate.
The devices are supplied via a permanently connected cable with max. 5 m length.

Supplementary to Variant KB2-Z2-HSG*U3* or PD2-Z2-HSG*U3*:
The Universal Box type UB03-Z2-* is carried out in type of protection „ec nC" and „tc" and is suitable for use in areas requiring EPL Gc or Dc.
Variants KB2-Z2-HSG*U3* or PD2-Z2-HSG*U3* are additionally supplied via a terminal box in type of protection Increased Safety "e" as part of the Universal Box.

15.3 **Parameters**

15.3.1 **Electrical parameters**

15.3.1.1 **Type PD2-Z2-***-**-**-*-**-HSG * ** * *** * ** *:**
(Pointing device)

Supply
via a permanently connected cable with max. 5 m length

Wires
for 8-wire cable: +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)
for 4-wire cable: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

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15.3.1.2 **Type KB2-Z2-***-00-**-*-**-HSG * ** * *** * ** *:**
(Keyboard without Pointing Device)
Supply via a permanently connected cable with max. 5 m length
Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

15.3.1.3 **Type KB2-Z2-***-TB-**-*-**-HSG * ** * *** * ** ***
Type KB2-Z2-*-TP-**-*-**-HSG * ** * *** * ** ***
Type KB2-Z2-*-JS-**-*-**-HSG * ** * *** * ** ***
(Keyboard with Pointing Device)

Supply with 2 separate intrinsically safe circuits
via an 8-wire permanently connected cable with max. 5 m length

15.3.1.3.1 Keyboard-circuit

Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

15.3.1.3.2 Pointing Device-Circuit

Wires +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

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15.3.1.4 **Type ***-Z2-***-**-**-*-**-HSG * ** * *** * U3 *:**
(Accessory UB03)

15.3.1.4.1 Terminal block X1, pin1
Non-intrinsically safe supply circuit (Power)

Nominal voltage		DC	5…30	V
Nominal current		≤	1	A
Nominal power		≤	30	W
Max. input voltage	U_m	AC	250	V

Terminal block X1, pin 2 and 3
Non-intrinsically safe interfaces data

Nominal voltage		AC/DC	5	V
Max. input voltage	U_m	AC	250	V

Terminal block X1, pin 2 and 3 (for "UB03-*-RFID-*-RS422*" only)
Non-intrinsically safe interfaces data

Max. voltage		AC/DC	30	V
Max. current		≤	1	A

Terminal block X1, pin 2 and 3 (for "UB03-*-AMP-Audio*" and "UB03-*-DSP-10*" only)
Non-intrinsically safe interfaces data

Max. output voltage		AC/DC	30	V

15.3.1.4.2 Terminal block X2
Non-intrinsically safe interfaces data

Nominal voltage		AC/DC	5	V
Max. input voltage	U_m	AC	250	V

15.3.2 **Thermal parameters**

Ambient temperature or temperature at the place of installation	T_a	-40 °C … +70 °C

16 **Report Number**

BVS PP 20.2171 EU, as of 2024-04-16

17 **Specific Conditions of Use**

17.1 Type KB2-… and type PD2-…:
When supplied with > 250 mA in dust-explosive areas:
The device must be supplied by an ia-circuit (linear characteristics).

17.2 Type KB2-Z2-***-TB-**-*-**-HSG * ** * *** * ** *,
Type KB2-Z2-***-TP-**-*-**-HSG * ** * *** * ** *,
Type KB2-Z2-***-JS-**-*-**-HSG * ** * *** * ** *.
The connection cable contains 2 separate intrinsically safe circuits.
The device has to be installed in such a way that mechanical effects (pulling forces) on the cable are excluded.
The cable has to be fixed and effectively protected against damage.

17.3 The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.

17.4 The enclosure, must be connected to earth potential with max. 1 MΩ. If applicable, the mounting components or the earth of mounted components can be used for this.

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Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

17.5 For the variants KB2-Z2-HSG*U3* or PD2-Z2-HSG*U3* a connecting cable with min. 0.5 mm insulation (conductor / outer sheath) must be used for the UB03 connection. The connecting cable must be installed in the housing in such a way that a distance of min. 50 mm to bare conductive parts of the keyboard / pointing device is ensured.

18 **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

19 **Remarks and additional information**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2024-04-16
BVS-Rip/Mu A 20240214 / 343345700

Managing Director

DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
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3 IECEx certificate

3.1 KB2 / PD2

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx BVS 20.0065X** Page 1 of 5 Certificate history:
Issue 0 (2020-10-19)

Status: **Current** Issue No: 1

Date of Issue: 2024-04-22

Applicant: **R. STAHL HMI SYSTEMS GmbH**
Adolf-Grimme-Allee 6
50829 Köln
Germany

Equipment: **Keyboard with pointing device type KB2-BB-CCC-DD-EE-F-*, Pointing device type PD2-BB-CCC-DD-EE-F-* and Keyboard matrix interface type KM2-BB-CCC-DD-EE-F-***

Optional accessory:

Type of Protection: **Intrinsic Safety "i"**

Marking:

Type KB2-Z1-… Type PD2-Z1-… Type KM2-Z1-…	When connected to an ia-circuit: Ex ia IIC T4 Gb Ex ia IIIC T_{200} 135°C Db When connected to an ib-circuit: Ex ib IIC T4 Gb Ex ib IIIC T_{200} 135°C Db When connected to an ic-circuit: Ex ic IIC T4 Gc Ex ic IIIC T_{200} 135°C Dc
Type KB2-Z2-… Type PD2-Z2-… Type KM2-Z2-…	Ex ic IIC T4 Gc Ex ic IIIC T_{200} 135°C Dc

Approved for issue on behalf of the IECEx Certification Body: **Dr Franz Eickhoff**

Position: **Senior Lead Auditor, Certification Manager and officially recognised expert**

Signature:
(for printed version)

Date:
(for printed version) 2024-04-22

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44809 Bochum
Germany

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0065X** Page 2 of 5

Date of issue: 2024-04-22 Issue No: 1

Manufacturer: **R. STAHL HMI SYSTEMS GmbH**
Adolf-Grimme-Allee 6
50829 Köln
Germany

Manufacturing locations: **R. STAHL HMI SYSTEMS GmbH**
Adolf-Grimme-Allee 6
50829 Köln
Germany

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 equipment 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 60079-0:2017 Edition:7.0 Explosive atmospheres - Part 0: Equipment - General requirements

IEC 60079-11:2011 Edition:6.0 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

This Certificate **does not** indicate compliance with 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/ExTR20.0062/01

Quality Assessment Report:

DE/BVS/QAR06.0007/15

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0065X** Page 3 of 5

Date of issue: 2024-04-22 Issue No: 1

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Subject and Type

Types **AAA-BB-CCC-DD-EE-F-***
In the complete type denomination, the wild cards A-F are replaced by the following characters and numbers to distinguish different variants

AAA: Type
KB2 Keyboard with pointing device
PD2 Pointing device only
KM2 Keyboard matrix interface

BB: Zone
Z1 For use in Zone 1, 2, 21, 22
Z2 For use in Zone 2, 22

CCC: Type of interface (not Ex-relevant)

DD: Type of pointing device
00 No pointing device
TB Trackball
TP Touchpad
JS Joystick

EE: Front plate material
AP Aluminium coated
AL Aluminium anodized
V2 Stainless steel
V4 Stainless steel
ST Steel

F: Surface front foil
P Polyester foil
V Metallic foil

The * is replaced by characters and numbers to distinguish variations with no influence to explosion protection.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1 Type KB2-… and type PD2-…:
For use in gas-explosive areas, the devices must be installed in a suitable enclosure to obtain at least IP20 in accordance with IEC 60529.

2 Type KB2-… and type PD2-… and KM2-…:
When used in dust-explosive areas, the device has to be installed in a suitable enclosure to obtain at least IP64 in accordance with IEC 60079-0.
When supplied with > 250 mA in dust-explosive areas:
The device must be supplied by an ia-circuit (linear characteristics).

3 Type KB2-**-***-TB-**-*-* and type KB2-**-***-TP-**-*-* and type KB2-**-***-JS-**-*-*:
The connection cable contains 2 separate intrinsically safe circuits.
The device has to be installed in such a way that mechanical effects (pulling forces) on the cable are excluded.
The cable has to be fixed and effectively protected against damage.

4 The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0065X** Page 4 of 5

Date of issue: 2024-04-22 Issue No: 1

Equipment (continued):

Description

The Human Interface Devices (HIDs) KB2-..., PD2-... and KM2-... are used for connection to PCs or similar devices in hazardous areas.

The HIDs are intrinsically safe apparatus.
The variants KB2-Z1-..., PD2-Z1-... and KM2-Z1-... are suitable for use in areas requiring EPL Gb or Db. They have level of protection ia, when connected to an ia-circuit. When conneted to an ib-circuit, they have level of protection ib. When connected to an ic-circuit, they have level of protection ic and are suitable for areas requiring EPL Gc or Dc.
The variants KB2-Z2-..., PD2-Z2-... and KM2-Z2-... are suitable for use in areas requiring EPL Gc or Dc.

The Keyboards type KB2-... and the Pointing Devices type PD2-... are intended for installation into a control board or for installation into a suitable cutout of an external enclosure. They have a metallic frontplate with switches and control elements as joystick, trackball or touchpad. The electronic is placed behind the frontplate. The backside of the apparatus is open (no enclosure).
The installation depends on the use:

- For use in Group II:
  The devices have to be installed in such a way that at least IP20 according to IEC 60529 is ensured for the backside.
- For use in Group III:
  The devices have to be installed in such a way that at least IP64 according IEC 60079-0 is ensured for the backside.
  When supplied with maximum current > 250 mA:
  The devices must be supplied by an ia-circuit (linear characteristics).
- Installation in t, e, p:
  Types KB2-Z1-..., PD2-Z1-...:
  The devices are suitable for installation into the cutout of an enclosure with IP64 according to IEC 60079-0. resp. into the cutout of an enclosure type of protection Ex eb resp. ec or Ex tb resp. tc or Ex p. They fulfil the respective enclosure requirements.
  Types KB2-Z2-..., PD2-Z2-...:
  The devices are suitable for installation into the cutout of an enclosure with IP64 according to IEC 60079-0. resp. into the cutout of an enclosure type of protection Ex ec or Ex tc or Ex pzc. They fulfil the respective enclosure requirements.

  The devices are supplied via a permanently connected cable with max. 5 m length.

The Keyboard Matrix Interfaces Typ KM2-... are intended for connection of an external keyboard.
They consist of a metallic enclosure with inner electronics.
The connection is done via external terminals.
The enclosure has IP20 according to IEC 60529.

- For use in Group III:
  The devices have to be installed in such a way that at least IP64 according IEC 60079-0 is ensured for the backside.
  When supplied with maximum current > 250 mA:
  The devices must be supplied by an ia-circuit (linear characteristics).

Listing of all components used referring to older standards

No components

Parameters

See Annex

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0065X** Page 5 of 5

Date of issue: 2024-04-22 Issue No: 1

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
The internal electronics was partly modified, the parameters are unchanged.

Annex:

BVS_20_0065X_R. STAHL HMI_Annex_issue1.pdf

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0065X issue No: 1**
Annex
Page 1 of 3

Parameters:

1 Electrical parameters

1.1 **Type PD2-**-***-**-**-*-*:**
(Pointing device)

Supply
via a permanently connected cable with max. 5 m length

Wires
for 8-wire cable: +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)
for 4-wire cable: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

1.2 **Type KB2-**-***-00-**-*-*:**
(Keyboard without Pointing Device)

Supply
via a permanently connected cable with max. 5 m length

Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

1.3 **Type KB2-**-***-TB-**-*-*,**
Type KB2--***-TP-**-*-*,**
Type KB2--***-JS-**-*-*:**
(Keyboard with Pointing Device)

Supply with 2 separate intrinsically safe circuits
via an 8-wire permanently connected cable with max. 5 m length

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0065X issue No: 1**
Annex

1.3.1 Keyboard-circuit

Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9 V
Maximum input current	I_i		
For Group II			319 mA
For Group III, ia			319 mA
For Group III, ib resp. ic			250 mA
Maximum input power	P_i		650 mW
Effective internal capacitance	C_i		21 µF
Effective internal inductance	L_i		1.68 µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200 pF/m
Cable inductance	L_c	1 µH/m

1.3.2 Pointing Device-Circuit

Wires +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)

Maximum input voltage	U_i	DC	5.9 V
Maximum input current	I_i		
For Group II			319 mA
For Group III, ia			319 mA
For Group III, ib resp. ic			250 mA
Maximum input power	P_i		650 mW
Effective internal capacitance	C_i		21 µF
Effective internal inductance	L_i		1.68 µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200 pF/m
Cable inductance	L_c	1 µH/m

1.4 Type **KM2-**-***-**-**-*-*:**
(Keyboard Matrix)

1.4.1 Supply
Terminal block X1
Terminals +5V (1), USB_m (2), USB_p (3), GND (4)

Maximum input voltage	U_i	DC	5.9 V
Maximum input current	I_i		
For Group II			319 mA
For Group III, ia			319 mA
For Group III, ib resp. ic			250 mA
Maximum input power	P_i		650 mW
Effective internal capacitance	C_i		20.5 µF
Effective internal inductance	L_i		1.68µH

Terminal 5 is intended for connection of a cable shield.

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0065X issue No: 1**
Annex
Page 3 of 3

1.4.2 Terminals for connection of an external keyboard:
Terminal blocks X2, X3, X4:
(The signals at all 3 terminal blocks are regarded as 1 intrinsically safe circuit)

Maximum output voltage	U_o	= U_i	
Maximum output current	I_o	250	mA
Maximum output power	P_o	= P_i	
Maximum external capacitance	C_o	0.5	µF
Maximum external inductance	L_o	0.5	µH

2 Thermal parameters

Ambient temperature resp. temperature at the place of installation	T_a	-40 °C ... +70 °C

Further details are part of the manual.

3.2 KB2 / PD2 -*-HSG*00* / *U3*

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx BVS 20.0084X**	Page 1 of 4	Certificate history: Issue 0 (2020-12-11)
Status:	**Current**	Issue No: 1	
Date of Issue:	2024-04-22		
Applicant:	**R. STAHL HMI SYSTEMS GmbH** Adolf-Grimme-Allee 6 50829 Köln **Germany**		
Equipment:	**Keyboard with pointing device and enclosure type KB2- BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM * or only Pointing device type PD2- BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM ***		
Optional accessory:			
Type of Protection:	**Intrinsic Safety "i", Type of Protection "n", Protection by Enclosure "t", Powder Filling "q", Increased Safety "e"**		
Marking:	See Annex		

Approved for issue on behalf of the IECEx Certification Body: **Dr Franz Eickhoff**

Position: **Senior Lead Auditor, Certification Manager and officially recognised expert**

Signature: (for printed version)

Date: (for printed version) 2024-04-22

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Certificate issued by:

DEKRA Testing and Certification GmbH
Certification Body
Dinnendahlstrasse 9
44809 Bochum
Germany

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0084X** Page 2 of 4

Date of issue: 2024-04-22 Issue No: 1

Manufacturer: **R. STAHL HMI SYSTEMS GmbH**
Adolf-Grimme-Allee 6
50829 Köln
Germany

Manufacturing locations: **R. STAHL HMI SYSTEMS GmbH**
Adolf-Grimme-Allee 6
50829 Köln
Germany

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 equipment 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-15:2010 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:4

IEC 60079-31:2022 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

IEC 60079-5:2015 Explosive atmospheres –Part 5: Equipment protection by powder filling “q”
Edition:4.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with 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/ExTR20.0083/01

Quality Assessment Report:

DE/BVS/QAR06.0007/15

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0084X** Page 3 of 4

Date of issue: 2024-04-22 Issue No: 1

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Subject and Type

See Annex

Description

The Keyboard with Pointing Device and enclosure and the Pointing Device (Human interface devices) are used for connection to PCs or similar devices in hazardous areas.

The Keyboard with Pointing Device and enclosure and the Pointing Device (Human interface devices) are used for connection to PCs or similar devices in hazardous areas.

The separately certified Keyboard / Pointing Device (BVS 20 ATEX E 078 X issue 01,
BVS 20 ATEX E 079 X issue 01, IECEx BVS 20.0065X issue 1) is mounted in a housing in which the already certified Universal Box type UB03-Z*-* (BVS 18 ATEX E 001, BVS 18 ATEX E 002,
IECEx BVS 18.0001) may be installed optionally.

Variant KB2-*-HSG*00* or PD2-*-HSG*00*:
The Keyboard / Pointing Device is carried out in type of protection Intrinsic Safety "i".
The variants KB2-Z1-… and PD2-Z1-… are suitable for use in areas requiring EPL Gb or Db. They have level of protection ia, when connected to an ia-circuit. When connected to an ib-circuit, they have level of protection ib.
The variants KB2-Z2-… and PD2-Z2-… are suitable for use in areas requiring EPL Gc or Dc.
The Keyboards type KB2-… and the Pointing Devices type PD2-… have a metallic frontplate with switches and control elements as joystick, trackball or touchpad.
The electronic is placed behind the frontplate.
The devices are supplied via a permanently connected cable with max. 5 m length.

Supplementary to Variant KB2-*-HSG*U3* or PD2-*-HSG*U3*:

The Universal Box type UB03-Z1-* is carried out in type of protection "eb q" and "tb" and is suitable for use in areas requiring EPL Gb or Db.

The Universal Box type UB03-Z2-* is carried out in type of protection "ec nC" and "tc" and is suitable for use in areas requiring EPL Gc or Dc

Variants KB2-*-HSG*U3* or PD2-*-HSG*U3* are additionally supplied via a terminal box in type of protection Increased Safety "e" as part of the Universal Box.

Parameters

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Type KB2-… and type PD2-… :
   When supplied with > 250 mA in dust-explosive areas:
   The device must be supplied by an ia-circuit (linear characteristics).
2. Type KB2-**-***-TB-**-*-**-HSG * ** * *** * ** *,
   Type KB2-**-***-TP-**-*-**-HSG * ** * *** * ** *,
   Type KB2-**-***-JS-**-*-**-HSG * ** * *** * ** *:
   The connection cable contains 2 separate intrinsically safe circuits.
   The device has to be installed in such a way that mechanical effects (pulling forces) on the cable are excluded.
   The cable has to be fixed and effectively protected against damage.
3. The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.
4. The enclosure, must be connected to earth potential with max. 1 MΩ. If applicable, the mounting components or the earth of mounted components can be used for this.
5. For the variants KB2-*-HSG*U3* or PD2-*-HSG*U3* a connecting cable with min. 0.5 mm insulation (conductor / outer sheath) must be used for the UB03 connection. The connecting cable must be installed in the housing in such a way that a distance of min. 50 mm to bare conductive parts of the keyboard / pointing device is ensured.

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0084X** Page 4 of 4

Date of issue: 2024-04-22 Issue No: 1

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
The Keyboard / Pointing Device certified in IECEx BVS 20.0065X with issue 01 can be optionally used.

Annex:

BVS_20_0084X_STAHL HMI_Annex_issue1.pdf

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0084X issue No: 1**
Annex
Page 1 of 4

Subject and Type

Keyboard with pointing device and enclosure or Pointing Device only
Types AAA-BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM *

In the complete type denomination, the wild cards A-M are replaced by the following characters and numbers to distinguish different variants:

AAA:	**Type**
KB2	Keyboard with Pointing Device
PD2	Pointing device only
BB:	**Zone**
Z1	For use in Zone 1, 2, 21, 22
Z2	For use in Zone 2, 22
CCC:	**Type of interface** (not Ex-relevant)
DD:	**Type of pointing device**
00	no pointing device
TB	Trackball
TP	Touchpad
JS	Joystick
EE:	**Front plate material**
AP	Aluminium coated
AL	Aluminium anodized
V2	Stainless steel
V4	Stainless steel
ST	Steel
F:	**Surface front foil**
P	Polyester foil
V	Metallic foil
GG:	**Layout** (not Ex-relevant)
HSG:	**Housing**
H:	**Sealing**
1	Sealing 1
2	Sealing 2
II:	**Housing material**
V2	Housing material V2A
V4	Housing material V4A
J:	**Coating**
N	no coating (natural or eloxal)
P	Coating
M	Metallic coating
KKK:	**Mounting option**
M##	Mounting options
B##	Back cover
L:	**Design option** (not Ex-relevant)
MM:	**Accessory**
00	without accessory
U3	UB03

The * and # are replaced by characters and numbers to distinguish variations with no influence to explosion protection.

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0084X issue No: 1**
Annex
Page 2 of 4

Parameters

1 **Electrical parameters**

1.1 **Type PD2-**-***-**-**-*-**-HSG * ** * *** * ** *:**
(Pointing device)

Supply via a permanently connected cable with max. 5 m length

Wires for 8-wire cable: +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6) for 4-wire cable: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

1.2 **Type KB2-**-***-00-**-*-**-HSG * ** * *** * ** *:**
(Keyboard without Pointing Device)
Supply via a permanently connected cable with max. 5 m length
Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	µH/m

1.3 **Type KB2-**-***-TB-**-*-**-HSG * ** * *** * ** ***
Type KB2--***-TP-**-*-**-HSG * ** * *** * ** ***
Type KB2--***-JS-**-*-**-HSG * ** * *** * ** ***
(Keyboard with Pointing Device)

Supply with 2 separate intrinsically safe circuits
via an 8-wire permanently connected cable with max. 5 m length

1.3.1 Keyboard-circuit

Wires +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0084X issue No: 1**
Annex
Page 3 of 4

For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c		200	pF/m
Cable inductance	L_c		1	µH/m

1.3.2 Pointing Device-Circuit

Wires +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	µF
Effective internal inductance	L_i		1.68	µH

For the permanently connected cable, the following values have to be respected additionally:

Cable capacitance	C_c		200	pF/m
Cable inductance	L_c		1	µH/m

1.4 **Type ***-**-***-**-**-*-**-HSG * ** * *** * U3 *:**
(Accessory UB03)

1.4.1 Terminal block X1, pin1
Non-intrinsically safe supply circuit (Power)

Nominal voltage		DC	5…30	V
Nominal current		≤	1	A
Nominal power		≤	30	W
Max. input voltage	U_m	AC	250	V

Terminal block X1, pin 2 and 3
Non-intrinsically safe interfaces data

Nominal voltage		AC/DC	5	V
Max. input voltage	U_m	AC	250	V

Terminal block X1, pin 2 and 3 (for “UB03-*-RFID-*-RS422*” only)
Non-intrinsically safe interfaces data

Max. voltage		AC/DC	30	V
Max. current		≤	1	A

Terminal block X1, pin 2 and 3 (for “UB03-*-AMP-Audio*” and “UB03-*-DSP-10*” only)
Non-intrinsically safe interfaces data

Max. output voltage		AC/DC	30	V

1.4.2 Terminal block X2
Non-intrinsically safe interfaces data

Nominal voltage		AC/DC	5	V
Max. input voltage	U_m	AC	250	V

2 **Thermal parameters**

Ambient temperature or temperature at the place of installation	T_a	-40 °C ... +70 °C

IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0084X issue No: 1**
Annex
Page 4 of 4

Marking

1 Type KB2-Z1-…-HSG…00…
Type PD2-Z1-…-HSG…00…

When connected to an ia-circuit:

Ex ia IIC T4 Gb
Ex ia IIIC T_{200} 135°C Db

When connected to an ib-circuit:

Ex ib IIC T4 Gb
Ex ib IIIC T_{200} 135°C Db

When connected to an ic-circuit:

Ex ic IIC T4 Gc
Ex ic IIIC T_{200} 135°C Dc

2 Type KB2-Z1-…-HSG…U3…
Type PD2-Z1-…-HSG…U3…

When connected to an ia-circuit:

Ex eb ia q IIC T4 Gb
Ex ia tb IIIC T135°C Db

When connected to an ib-circuit:

Ex eb ib q IIC T4 Gb
Ex ib tb IIIC T135°C Db

When connected to an ic-circuit:

Ex eb ic q IIC T4 Gc
Ex ic tb IIIC T135°C Dc

3 Type KB2-Z2-…-HSG…00…
Type PD2-Z2-…-HSG…00…

Ex ic IIC T4 Gc
Ex ic IIIC T_{200} 135°C Dc

4 Type KB2-Z2-…-HSG…U3…
Type PD2-Z2-…-HSG…U3…

Ex ec ic nC IIC T4 Gc
Ex ic tc IIIC T135°C Dc

4 Indian certificates

4.1 BIS

भारतीय मानक ब्यूरो
(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)
BUREAU OF INDIAN STANDARDS
(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

मानक भवन, 9 बहादुर शाह जफ़र मार्ग, नई दिल्ली – 110002
Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi – 110002
दूरभाष/Phone: +91-11-23230856/2323010131/23233375/23239402
ई–मेल/E-mail: registration@bis.gov.in
वेबसाईट/Website: https://bis.gov.in/, https://www.crsbis.in/BIS/

Our Ref: Registration/CRS 2022-1526/R-41226106 Date:23-05-2022

Subject : Licence Document

MANUFACTURING UNIT :	R.Stahl Hmi Systems Gmbh ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829 office@stahl-hmi.de 49221768061000	

Dear Sir,

1.With reference to your Application, we are pleased to inform you that it has been decided to grant you licence as per details given below :

Product Category :	Keyboard
Product Name :	Keyboard
IS NO :	IS 13252(PART 1):2010/ IEC 60950-1 : 2005
Brand (As Declared by Manufacturer) :	STAHL
Model :	[Brand -> STAHL, Models -> KB2-JS, KB2-TB, KB2-TP]
Factory Address :	ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829

2. The Licence is being granted for your unit located at the address and for the brand and models mentioned at serial no 1 above.

3. The number assigned to this Licence is **R-41226106** which has been made operative from **23-05-2022** and is valid upto **22-05-2024** . The Licence Number should invariably be referred to in your future correspondence.

4. The rights and privileges under the licence shall not be exercised by any other factory / organization at any other location. This licence is not transferable. In the event of shifting of the manufacturing machinery from the registered premises to some other place use of the Licence Number shall be stopped and BIS shall be informed.

5. The licensee shall comply with the provisions of the Act, rules and regulations framed thereunder and as amended from time to time.

6. The licensee shall follow the guidelines for the use of Standard Mark and labeling requirements as per Annex-I.

7. The licensee shall not use the licence in any manner which contravenes the provisions of Act, rules and regulations framed thereunder and as amended from time to time.

8. Upon expiry of validity, stoppage or suspension or cancellation of licence, you shall discontinue forthwith the self declaration of conformity to the relevant Indian Standard(s) and withdraw all promotional and advertising matter which contains any reference thereto.

9. As per your declaration, **SATHISHKUMAR D, Cetiification Manager, R STAHL PRIVATE LIMITED(Address- Plot No 5 Malrosapuram Main Road, Sengundram Industrial Area, Singaperumal koil 603204 Tamil Nadu,NA)** is your authorized Indian representative. Any intended change in the name of the Indian representative ought to be brought to our notice immediately along with requisite fees and document.

10. For renewal of licence, the licensee shall have to apply to BIS three months in advance before expiration of the licence and application form for renewal is available on BIS website

11. The licence is not transferable. Kindly acknowledge receipt of this letter.

Thanking you,

Yours faithfully,
(Deepti Budiyal)
Granting Authority
Telfax : +91-11-23230856
E-mail: registration@bis.gov.in

Note: This is a system generated letter. Hence signature is not required.
To verify authentication of letter, kindly scan the QR code on this letter.

भारतीय मानक ब्यूरो
(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)
BUREAU OF INDIAN STANDARDS
(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

मानक भवन, 9 बहादुर शाह जफ़र मार्ग, नई दिल्ली – 110002
Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi – 110002
दूरभाष / Phone: +91-11-23230856/2323010131/23233375/23239402
ई–मेल / E-mail: registration@bis.gov.in
वेबसाईट / Website: https://bis.gov.in/, https://www.crsbis.in/BIS/

Our Ref: REGISTRATION /CRS-2022-1526/R-41226106

Dated: 2024-03-01 15:26:19

RENEWAL ID : 24795

Subject : RENEWAL OF LICENCE R-41226106 AS PER IS 13252(Part 1):2010/ IEC 60950-1 : 2005

R.Stahl Hmi Systems Gmbh
ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE
COLOGNE, Germany, 50829

Dear Sir/Madam,

With reference to your online application dated 01-03-2024 for renewal of the above mentioned licence; this is to inform you that the same has been renewed from **23-05-2024** to **22-05-2026**.

It may be noted that the said licence granted under clause (b) of sub section (2) of section 13 of the Act shall *expire* at the end of the period for which it is granted unless renewed or its renewal is deferred. You are, therefore, requested to apply for next renewal to BIS within three months before the expiration of the licence.

Thanking you.

Yours faithfully,

Registration Department
Bureau of Indian Standards,
9, Bahadur Shah Zafar Marg,
New Delhi-110002.
Telfax : +91-11-23230856
E-mail: registration@bis.gov.in

Note: This is a system generated letter. Hence signature is not required.
To verify authentication of letter, kindly scan the QR code on this letter.

For details information on BIS, consult the e-BIS Portal (www.manakonline. in).
Please use BIS CARE APP for verification of ISI-marked goods and hallmarked gold jewellery.

4.2 PESO

सत्यमेव जयते

Government of India
Ministry of Commerce & Industry
Petroleum & Explosives Safety Organisation (PESO)
5th Floor, A-Block, CGO Complex, Seminary Hills,
Nagpur - 440006

E-mail : **explosives@explosives.gov.in**
Phone/Fax No : **0712 -2510248, Fax-2510577**

Approval No : A/P/HQ/TN/104/6572 (P599287) Dated : **10/06/2024**

To,

M/s. R.STAHL HMI SYSTEMS Gmbh,
Adolf-Grimme-Allee 6,Koln
50829
GERMANY

Sub : Approval of Intrinsically Safe Type Electrical Equipments. under Petroleum Rules 2002- Regarding.

Sir(s),

Please refer to your letter No. **OIN1671781** dated **22/05/2024** on the subject.

The following Ex electrical equipment(s) manufactured by you according to **IEC 60079-0 : 2017, IEC 60079-11 : 2011,** standards and covered under **DEKRA Testing and Certification Gmbh** Test reports mentioned below is/are approved for use in **Zone 1** of Gas **IIC** hazardous areas coming under the the Petroleum Rules, 2002 administered by this Organization.

Sr. No	Description	Safety Protection	Equipment reference Number	Test Agency			Drawing no
				Name	Certificate No.	Certificate Date	
1	Keyboard with pointing device Type KB2-Z1-...	Ex ia IIC T4 Gb	**P599287/1**	DEKRA Testing and Certification Gmbh	IECEx BVS 20.0065X Issue No 1	22/04/2024	As per test report
2	Keyboard with pointing device Type KB2-Z1-...	Ex ib IIC T4 Gb	**P599287/2**	DEKRA Testing and Certification Gmbh	IECEx BVS 20.0065X Issue No 1	22/04/2024	As per test report

This Approval is granted subject to observance of the following conditions:-

1)The design and construction of the equipment shall be strictly in accordance with description, condition and drawings as mentioned in the DEKRA Testing and Certification Gmbh Test Reports referred to above.

2)The equipment shall be used only with approved type of accessories and associated apparatus.

3)Each equipment shall be marked either by raised lettering cast integrally or by plate attached permanently to the main structure to indicate conspicuously:-
(a) Name of the manufacturer
(b) Name and number by which the equipment is identified.
(c) Number & date of the test report of the DEKRA Testing and Certification Gmbh applicable to the equipment.
(d) Equipment reference number of this letter by which use of apparatus is approved.
(e) Protection level.

4) A certificate to the effect that the equipment has been manufactured strictly in accordance with the drawing referred to in the DEKRA Testing and Certification Gmbh Test report and is identical with the one tested and certified at DEKRA Testing and Certification Gmbh shall be furnished with each equipment.
5) The customer shall be supplied with a copy of this letter, an extract of the conditions and maintenence schedule, if any, recommended by DEKRA Testing and Certification Gmbh in their test reports and copy of instructions booklet detailing operation & maintenance of the equipment so as to maintain its Flame Proof characterestics.
6) The After sales service and maintanance of subject equipment shall be looked after by your representative R STAHL PRIVATE LIMITED, Plot No. 5 Malrosapuram Main Road Sengundram Indl Area

This approval also covers the permissible variations as approved under the DEKRA Testing and Certification Gmbh test reports referred above. This approval is liable to be cancelled if any of the conditions of the approval is violated or not complied with . The approval may also be amended or withdrawn at any time, if considered necessary in the interest of safety.

The field performance report from actual users/your customers of the subject equipment may please be collected and furnished to this office for verification and record on annual basis.
The Approval is Valid upto **31/12/2028**

Yours faithfully,

(Nishanta Mridul)
Dy. Controller of Explosives
For Chief Controller of Explosives
Nagpur

Copy to :
1. Jt. Chief Controller of Explosives, South Circle Office, CHENNAI
2. R STAHL PRIVATE LIMITED,Plot No. 5 Malrosapuram Main Road Sengundram Indl Area

for Chief Controller of Explosives
Nagpur

(For more information regarding status,fees and other details please visit our website http://peso.gov.in)

This is System Generated document. Signature is not required.

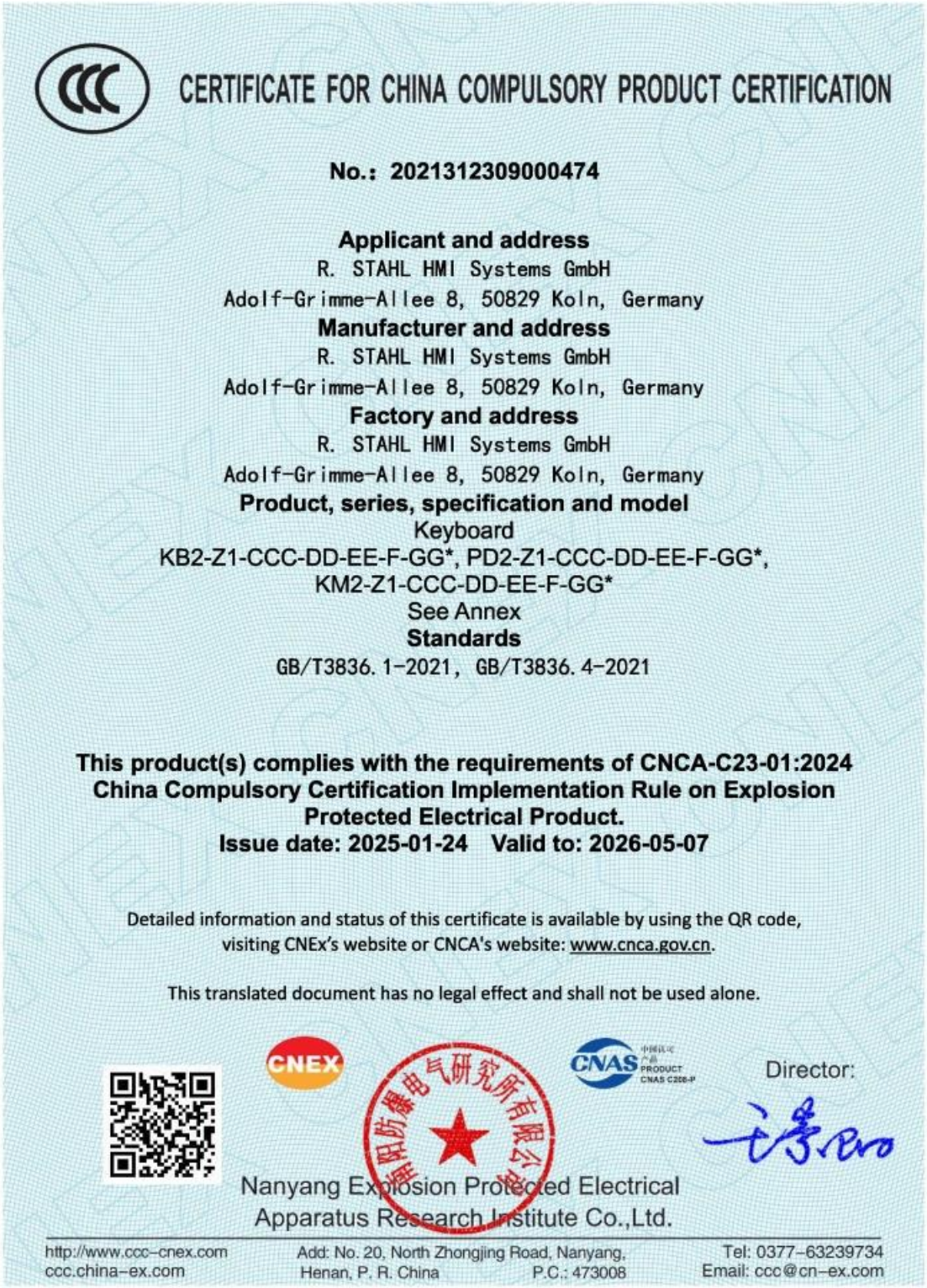
Digitally signed by NISHANTA MRIDUL
Reason: Approval No. : A/P/HQ/TN/104/6572
Location:Nagpur [P599287]
Date:10-06-2024 14:57:49 PM

5 Chinese certificates

5.1 CCC

5.1.1 KB2 / PD2 - Z1

5.1.1.1 English version



CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2021312309000474

Applicant and address
R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8, 50829 Koln, Germany
Manufacturer and address
R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8, 50829 Koln, Germany
Factory and address
R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8, 50829 Koln, Germany
Product, series, specification and model
Keyboard
KB2-Z1-CCC-DD-EE-F-GG*, PD2-Z1-CCC-DD-EE-F-GG*,
KM2-Z1-CCC-DD-EE-F-GG*
See Annex
Standards
GB/T3836.1-2021, GB/T3836.4-2021

This product(s) complies with the requirements of CNCA-C23-01:2024 China Compulsory Certification Implementation Rule on Explosion Protected Electrical Product.
Issue date: 2025-01-24 Valid to: 2026-05-07

Detailed information and status of this certificate is available by using the QR code, visiting CNEx's website or CNCA's website: www.cnca.gov.cn.

This translated document has no legal effect and shall not be used alone.

CNEX CNAS PRODUCT CNAS C208-P

Director:

Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.

http://www.ccc-cnex.com ccc.china-ex.com
Add: No. 20, North Zhongjing Road, Nanyang, Henan, P. R. China P.C.: 473008
Tel: 0377-63239734 Email: ccc@cn-ex.com

CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2021312309000474

Annex: Page 1 of 7

Product information:

1. This certificate covers the following models:

- Keyboard with pointing device : KB2-Z1-CCC-DD-EE-F-GG*,

Pointing device : PD2-Z1-CCC-DD-EE-F-GG*,

Keyboard matrix interface : KM2-Z1-CCC-DD-EE-F-GG*

Subject and Type:

Types AAA-BB-CCC-DD-EE-F-GG*

In the complete type denomination, the wild cards A-G are replaced by the following characters and numbers to distinguish different variants.

AAA:	**Type**
KB2	Keyboard with pointing device
PD2	Pointing device only
KM2	Keyboard matrix interface

BB:	**Zone**
Z1	For use in Zone 1, 2, 21, 22

CCC:	**Type of interface (not Ex-relevant)**
USB	USB
PS2	PS2

DD:	**Type of pointing device**
00	No pointing device
TB	Trackball
TP	Touchpad
JS	Joystick

EE:	**Front plate material**
AP	Aluminium coated
AL	Aluminium anodized
V2	Stainless steel
V4	Stainless steel
ST	Steel

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CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2021312309000474

Annex: Page 2 of 7

F:	**Surface front foil**
P	Polyester foil
V	Metallic foil

GG:	**Layout (not Ex-relevant)**
CN	keyboard layout CN (China)
US	keyboard layout US-American
DE	keyboard layout German
FR	keyboard layout French
DK	keyboard layout Denmark
SL	keyboard layout Slovenia
ES	keyboard layout Spain
SE	keyboard layout Sweden
JP	keyboard layout Japan
00	no keyboard layout

The * is replaced by characters and numbers to distinguish variations with no influence to explosion protection.

Parameters:

Electrical parameters:

Type PD2-Z1-*-**-**-*-**** *(Pointing device):

Supply via a permanently connected cable with max. 5 m length.

Wires: for 8-wire cable: +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6).

for 4-wire cable: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Maximum input voltage U_i	5.9V DC
Maximum input current I_i	
For Group II	319mA
For Group III, ia	319mA
For Group III, ib	250mA
Maximum input power P_i	650mW

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CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2021312309000474

Annex: Page 3 of 7

Effective internal capacitance C_i	21μF
Effective internal inductance L_i	1.68μH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200pF/m
Cable inductance L_c	1μH/m

Type KB2-Z1-*-00-**-*-** *(Keyboard without Pointing Device) :**

Supply via a permanently connected cable with max. 5 m length.

Wires: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Maximum input voltage U_i	5.9V DC
Maximum input current I_i	
For Group II	319mA
For Group III, ia	319mA
For Group III, ib	250mA
Maximum input power P_i	650mW
Effective internal capacitance C_i	21μF
Effective internal inductance L_i	1.68μH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200pF/m
Cable inductance L_c	1μH/m

Type KB2-Z1-*-TB-**-*-** *, KB2-Z1-***-TP-**-*-** *, KB2-Z1-***-JS-**-*-** *:**

(Keyboard with Pointing Device)

Supply with 2 separate intrinsically safe circuits via an 8-wire permanently connected cable with max. 5 m length.

Keyboard-circuit:

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Tel: 0377-63239734 Email: ccc@cn-ex.com

CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2021312309000474

Annex: Page 4 of 7

Wires: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Maximum input voltage U_i	5.9V DC
Maximum input current I_i	
For Group II	319mA
For Group III, ia	319mA
For Group III, ib	250mA
Maximum input power P_i	650mW
Effective internal capacitance C_i	21μF
Effective internal inductance L_i	1.68μH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200pF/m
Cable inductance L_c	1μH/m

Pointing Device-Circuit :

Wires: +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6).

Maximum input voltage U_i	5.9V DC
Maximum input current I_i	
For Group II	319mA
For Group III, ia	319mA
For Group III, ib	250mA
Maximum input power P_i	650mW
Effective internal capacitance C_i	21μF
Effective internal inductance L_i	1.68μH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200pF/m
Cable inductance L_c	1μH/m

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CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2021312309000474

Annex: Page 5 of 7

Type KM2-Z1-*-**-**-*-** ***(Keyboard Matrix)**:**

Supply:

Terminal block X1

Terminals:+5V (1), USB_m (2), USB_p (3), GND (4).

Maximum input voltage U_i	5.9V DC
Maximum input current I_i	
For Group II	319mA
For Group III, ia	319mA
For Group III, ib	250mA
Maximum input power P_i	650mW
Effective internal capacitance C_i	20.5μF
Effective internal inductance L_i	1.68μH
Terminal 5 is intended for connection of a cable shield.	

Terminals for connection of an external keyboard:

Terminal blocks X2, X3, X4:

(The signals at all 3 terminal blocks are regarded as 1 intrinsically safe circuit)

Maximum output voltage U_o	$=U_i$
Maximum output current I_o	250 mA
Maximum output power P_o	$= P_i$
Maximum external capacitance C_o	0.5μF
Maximum external inductance L_o	0.5μH

Ambient temperature:-40℃~+70℃

Ex marking:

Type KB2-Z1-… ,Type PD2-Z1-… ,Type KM2-Z1-… :

When connected to an ia-circuit: Ex ia IIC T4 Gb, Ex ia IIIC T_{200} 135℃ Db

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Tel: 0377-63239734 Email: ccc@cn-ex.com

CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2021312309000474

When connected to an ib-circuit: Ex ib IIC T4 Gb, Ex ib IIIC T_{200} 135℃ Db

When connected to an ic-circuit: Ex ic IIC T4 Gc

- Manufacturer should organize production in accordance with the technical documents approved by the certification body.

2. Specific conditions of use:

- Type KB2-Z1-···· and type PD2-Z1-···· :

● For use in gas-explosive areas, the devices must be installed in a suitable enclosure to obtain at least IP20 in accordance with GB/T4208.

- Type KB2-Z1-···· and type PD2-Z1-···· and KM2-Z1-···· :

●When used in dust-explosive areas, the device has to be installed in a suitable enclosure to obtain at least IP64 in accordance with GB/T3836.1.

●When supplied with > 250 mA in dust-explosive areas: The device must be supplied by an ia-circuit (linear characteristics).

- Type KB2-Z1-***-TB-**-*-** * and type KB2-Z1-***-TP-**-*-** * and type KB2-Z1-***-JS-**-*-** *:

●The connection cable contains 2 separate intrinsically safe circuits.

●The device has to be installed in such a way that mechanical effects (pulling forces) on the cable are excluded.

●The cable has to be fixed and effectively protected against damage.

- The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.

- See instruction manual for other information.

3. Certificate change information:

- 1st change on April 28, 2023: Added the internal components.

- 2nd change on January 24, 2025: The internal electronics was

Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.

PRODUCT CNAS C208-P

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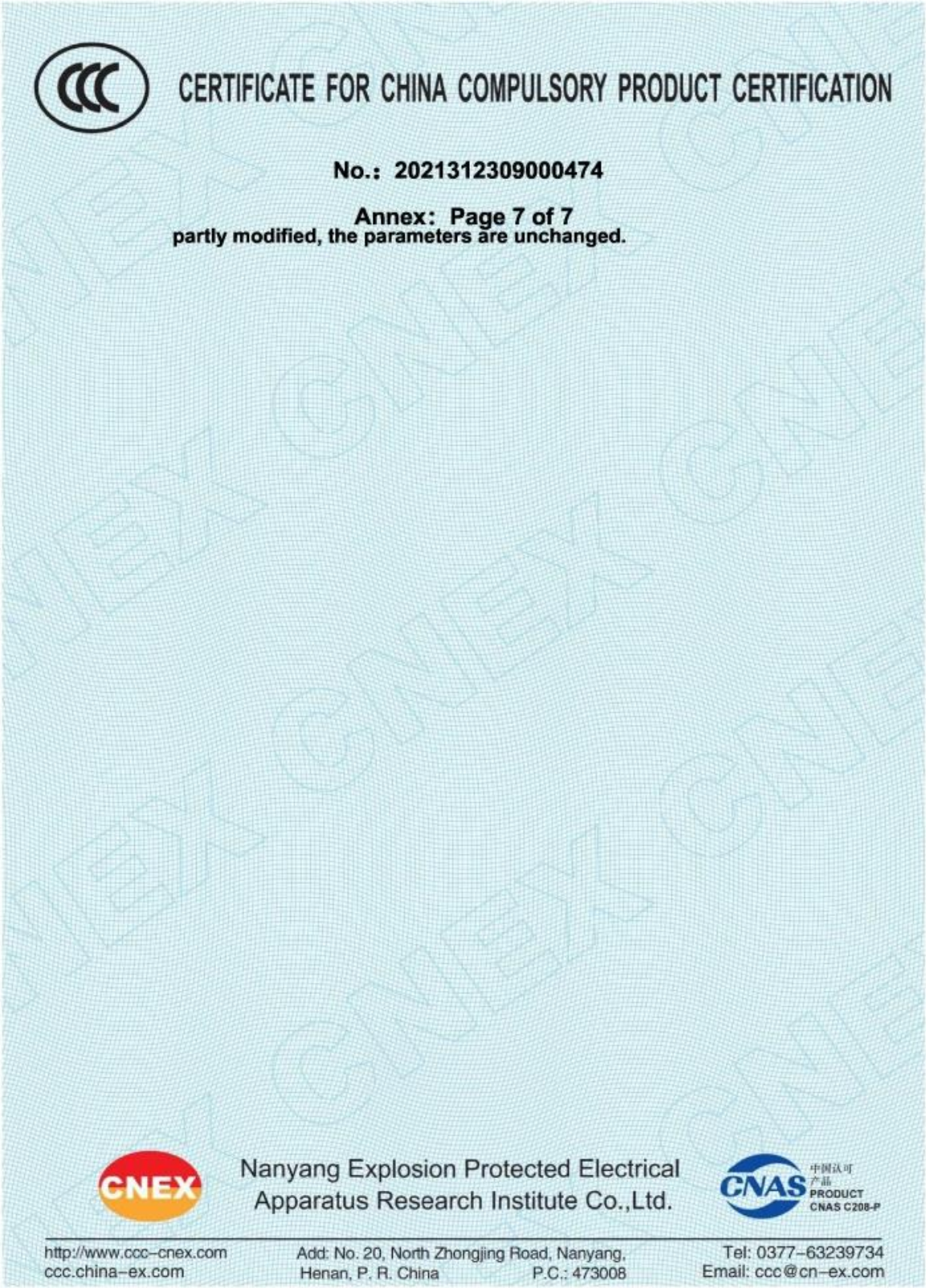
Tel: 0377-63239734
Email: ccc@cn-ex.com



CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2021312309000474

Annex: Page 7 of 7
partly modified, the parameters are unchanged.

Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.

PRODUCT CNAS C208-P

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Add: No. 20, North Zhongjing Road, Nanyang, Henan, P. R. China P.C.: 473008

Tel: 0377-63239734
Email: ccc@cn-ex.com

5.1.2 KB2 / PD2 - Z1-*-HSG*00* / *U3*

5.1.2.1 English version

CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2021312309000476

Applicant	R. STAHL HMI Systems GmbH
Address	Adolf-Grimme-Allee 8, 50829 Koln, Germany
Manufacturer	R. STAHL HMI Systems GmbH
Address	Adolf-Grimme-Allee 8, 50829 Koln, Germany
Production Factory	R. STAHL HMI Systems GmbH
Production Address	Adolf-Grimme-Allee 8, 50829 Koln, Germany
Product	Keyboard
Model/Type	KB2-Z1-...-HSG..., PD2-Z1-...-HSG...
Ex marking	See Annex
Reference Standards	GB/T 3836.1-2021, GB/T 3836.3-2021, GB/T 3836.4-2021, GB/T 3836.7-2017, GB/T 3836.31-2021
Certification mode	Type Test + Initial Factory Inspection + Post-Certification Surveillance

The product(s) is verified and certified according to CNCA-C23-01: 2019 *China Compulsory Certification Implementation Rule on Explosion Protected Electrical Product* and CNEX-C2301-2019 *Guideline of China Compulsory Certification Implementation Rule on Explosion Protected Electrical Product.*

See Annex for the detailed product information (9 pages)

Initial issue date: 2021-05-14

Issued date: 2023-04-29 Valid to: 2026-05-13

The validity of this certificate is maintained through the regular supervision of the issuing authority during the validity period.

Where any discrepancy arises between the English translation and the original Chinese version, the Chinese version shall prevail.

Director:

CNEX C C C

Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.

CNAS 中国认可 产品 PRODUCT CNAS C208-P

http://www.ccc-cnex.com ccc.china-ex.com

Add: No. 20, North Zhongjing Road, Nanyang, Henan, P. R. China P.C.: 473008

Tel: 0377-63239734 Email: ccc@cn-ex.com

CN 0001901

CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

(Annex)

No.: 2021312309000476

Product information:

1. This certificate covers the following models:

   - Keyboard with pointing device and enclosure: KB2-Z1-...-HSG...,

     Pointing device: PD2-Z1-...-HSG...

   Subject and Type:

   AAA-BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM *

   In the complete type denomination, the wild cards A-M are replaced by the following characters and numbers to distinguish different variants.

AAA:	**Type**
KB2	Keyboard with pointing device
PD2	Pointing device only

BB:	**Zone**
Z1	For use in Zone 1, 2, 21, 22

CCC:	**Type of interface**
USB	USB
PS2	PS2

DD:	**Type of pointing device**
00	no pointing device
TB	Trackball
TP	Touchpad
JS	Joystick

EE:	**Front plate material**
AP	Aluminium coated
AL	Aluminium anodized
V2	Stainless steel
V4	Stainless steel

Issued date: 2023-04-29

Director:

CNEX C C C

南阳防爆电气研究所有限公司

Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.

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CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

(Annex)

No.: 2021312309000476

ST	Steel
F:	**Surface front foil**
P	Polyester foil
V	Metallic foil
GG:	**Layout (not Ex-relevant)**
CN	keyboard layout CN (China)
US	keyboard layout US-American
DE	keyboard layout German
FR	keyboard layout French
DK	keyboard layout Denmark
SL	keyboard layout Slovenia
ES	keyboard layout Spain
SE	keyboard layout Sweden
JP	keyboard layout Japan
00	no keyboard layout
HSG:	**Housing**
HSG	Housing
H:	**Sealing**
1	Sealing 1
2	Sealing 2
II:	**Housing material**
V2	Enclosure material V2A
V4	Enclosure material V4A
J:	**Coating**
N	no coating
P	coating
M	Metallic coating
KKK:	**Mounting option**
M##	mounting options

Issued date: 2023-04-29

Director:

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CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

(Annex)

No.: 2021312309000476

B## backcover type

L: **Design option** (not Ex-relevant)

S Standard
G GMP-option

MM: Accessory
00 no accessory
U3 UB03

The * is replaced by characters and numbers to distinguish variations with no influence to explosion protection.

The # is replaced by one character or number to distinguish variations with no influence to explosion protection.

Parameters:

Electrical parameters:

Type PD2-Z1-***-**-**-*-**-HSG * ** * *** * ** *(Pointing device) :

Supply via a permanently connected cable with max. 5 m length.

Wires for 8-wire cable: +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6) for 4-wire cable: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Maximum input voltage U_i	5.9 V DC
Maximum input current I_i	
For Group II	319 mA
For Group III, ia	319 mA
For Group III, ib	250 mA

Issued date: 2023-04-29

Director:

Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.

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Tel: 0377-63239734 Email: ccc@cn-ex.com

CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

(Annex)

No.: 2021312309000476

Maximum input power P_i	650 mW
Effective internal capacitance C_i	21 µF
Effective internal inductance L_i	1.68 µH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200 pF/m
Cable inductance L_c	1 µH/m

Type KB2-Z1-***-00-**-*-**-HSG * ** * *** * ** *(Keyboard without Pointing Device) :

Supply via a permanently connected cable with max.5m length.

Wires: +5V (white resp.1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Maximum input voltage U_i	5.9 V DC
Maximum input current I_i	
For Group II	319 mA
For Group III, ia	319 mA
For Group III, ib	250 mA
Maximum input power P_i	650 mW
Effective internal capacitance C_i	21 µF
Effective internal inductance L_i	1.68 µH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200 pF/m
Cable inductance L_c	1 µH/m

Issued date: 2023-04-29

Director:

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CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

(Annex)

No.: 2021312309000476

Type KB2-Z1-***-TB-**-*-**-HSG * ** * *** * ** * ,
Type KB2-Z1-***-TP-**-*-**-HSG * ** * *** * ** * ,
Type KB2-Z1-***-JS-**-*-**-HSG * ** * *** * ** * (Keyboard with Pointing Device):

Supply with 2 separate intrinsically safe circuits via an 8-wire permanently connected cable with max. 5 m length.

Keyboard-circuit :

Wires: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Maximum input voltage U_i	5.9 V DC
Maximum input current I_i	
For Group II	319 mA
For Group III, ia	319 mA
For Group III, ib	250 mA
Maximum input power P_i	650 mW
Effective internal capacitance C_i	21 µF
Effective internal inductance L_i	1.68 µH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200 pF/m
Cable inductance L_c	1 µH/m

Pointing Device-Circuit :

Wires :+5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6).

Maximum input voltage U_i	5.9 V DC

Issued date: 2023-04-29

Director:

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CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

(Annex)

No.: 2021312309000476

Maximum input current I_i	
For Group II	319 mA
For Group III, ia	319 mA
For Group III, ib	250 mA
Maximum input power P_i	650 mW
Effective internal capacitance C_i	21 μF
Effective internal inductance L_i	1.68 μH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200 pF/m
Cable inductance L_c	1 μH/m

Type ***-Z1-***-**-**-*-**-HSG * ** * *** * U3 *(Accessory UB03) :

Terminal block X1, pin1	
Non-intrinsically safe supply circuit (Power)	
Nominal voltage	5~30V DC
Nominal current	≤ 1 A
Nominal power	≤ 30 W
Max. input voltage U_m	250V AC
Terminal block X1, pin 2 and 3	
Non-intrinsically safe interfaces data	
Nominal voltage	5V AC/DC
Max. input voltage U_m	250V AC
Terminal block X1, pin 2 and 3 (for "UB03-*-RFID-*-RS422*" only)	

Issued date: 2023-04-29

Director:

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CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

(Annex)

No.: 2021312309000476

Non-intrinsically safe interfaces data	
Max. voltage	30V AC/DC
Max. current	≤ 1 A
Terminal block X1, pin 2 and 3 (for "UB03-*-AMP-Audio*" and "UB03-*-DSP-10*" only)	
Non-intrinsically safe interfaces data	
Max. output voltage	30V AC/DC

Terminal block X2	
Non-intrinsically safe interfaces data	
Nominal voltage	5V AC/DC
Max. input voltage U_m	250V AC

Rated ambient temperature range: -40 °C up to +70 °C

Ex marking:

Type KB2-Z1-...-HSG...00... and Type PD2-Z1-...-HSG...00... :

When connected to an ia-circuit: Ex ia IIC T4 Gb, Ex ia IIIC T_{200} 135°C Db

When connected to an ib-circuit: Ex ib IIC T4 Gb, Ex ib IIIC T_{200} 135°C Db

When connected to an ic-circuit: Ex ic IIC T4 Gc

Type KB2-Z1-...-HSG...U3... and Type PD2-Z1-...-HSG...U3... :

When connected to an ia-circuit: Ex eb ia q IIC T4 Gb, Ex ia tb IIIC T135°C Db

When connected to an ib-circuit: Ex eb ib q IIC T4 Gb, Ex ib tb IIIC T135°C Db

When connected to an ic-circuit: Ex eb ic q IIC T4 Gc

Issued date: 2023-04-29

Director:

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CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

(Annex)

No.: 2021312309000476

- Producers should organize production in accordance with the technical documents approved by the certification body.

2. Specific conditions of safety use:

- Ingress protection: IP66.

- Type KB2-Z1-... and type PD2-Z1-... :

  •When supplied with > 250 mA in dust-explosive areas: The device must be supplied by an ia-circuit (linear characteristics).

- Type KB2-Z1-***-TB-**-*-**-HSG * ** * *** * ** *,

  Type KB2-Z1-***-TP-**-*-**-HSG * ** * *** * ** *,

  Type KB2-Z1-***-JS-**-*-**-HSG * ** * *** * ** *:

  •The connection cable contains 2 separate intrinsically safe circuits.

  •The device has to be installed in such a way that mechanical effects (pulling forces) on the cable are excluded.

  •The cable has to be fixed and effectively protected against damage.

- The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.

- The enclosure, must be connected to earth potential with max. 1MΩ. If applicable, the mounting components or the earth of mounted components can be used for this.

- For the variants KB2-*-HSG*U3* or PD2-*-HSG*U3* a connecting cable with min. 0.5 mm insulation (conductor / outer sheath) must be used for the UB03 connection. The connecting cable must be installed in the housing in such a way that a distance of min. 50 mm to bare conductive parts of the keyboard / pointing device is ensured.

- See instruction for other information.

3. Certificate related report(s):

Issued date: 2023-04-29

Director:

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Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.

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CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

(Annex)

No.: 2021312309000476

- Type test report: CQST2103C003, CQST2103C003/01
- Factory inspection report: CN2023Q030119

4. Certificate change information:

- 1st change on April 29, 2023: Updated the standards for certification.

Issued date: 2023-04-29

Director:

Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.

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5.1.2.2 Chinese version

中国国家强制性产品认证证书

编 号：2021312309000476

委 托 人	R. STAHL HMI Systems GmbH
地 址	Adolf-Grimme-Allee 8, 50829 Koln, Germany
生 产 者	R. STAHL HMI Systems GmbH
地 址	Adolf-Grimme-Allee 8, 50829 Koln, Germany
生 产 企 业	R. STAHL HMI Systems GmbH
生 产 地 址	Adolf-Grimme-Allee 8, 50829 Koln, Germany
产 品 名 称	防爆键盘
型 号 规 格	KB2-Z1-...-HSG..., PD2-Z1-...-HSG...
防 爆 标 志	见附页
依 据 标 准	GB/T 3836.1-2021, GB/T 3836.3-2021, GB/T 3836.4-2021, GB/T 3836.7-2017, GB/T 3836.31-2021
认 证 模 式	型式试验+初始工厂检查+获证后监督

上述产品符合 CNCA-C23-01: 2019《强制性产品认证实施规则 防爆电气》和 CNEX-C2301-2019《强制性产品认证实施细则 防爆电气》的要求。

产品相关信息见附页（共 8 页）。

首次发证日期：2021 年 05 月 14 日

颁发日期：2023 年 04 月 29 日 有效期至：2026 年 05 月 13 日

证书有效期内本证书的有效性依据发证机构的定期监督获得保持。

主任：

南阳防爆电气研究所有限公司

CNEX CCC

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CN 0025797

中国国家强制性产品认证证书
（附页）

编　号：2021312309000476

第 1 页 共 8 页

产品相关信息：

1、本证书覆盖产品如下：

- KB2-Z1-...-HSG... ，PD2-Z1-...-HSG...

型号命名：

AAA-BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM *

在完整的型号命名中，A-M 被以下字符和数字所取代，以区分不同的型号。

AAA:	**型号**
KB2	带定点设备的键盘
PD2	仅限定点设备
BB:	**区域**
Z1	用于 1、2、21、22 区
CCC:	**接口类型**
USB	USB
PS2	PS2
DD:	**定点设备类型**
00	无定点设备
TB	轨迹球
TP	触摸板
JS	操纵杆
EE:	**前板材料**
AP	铝涂层
AL	铝阳极氧化
V2	不锈钢
V4	不锈钢

颁发日期：2023 年 04 月 29 日

主任：

南阳防爆电气研究所有限公司

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中国国家强制性产品认证证书
（附页）

编　号：2021312309000476

ST	钢
F:	**表面前膜**
P	聚酯膜
V	金属膜
GG:	**布局（与防爆无关）**
CN	键盘布局 CN (中国)
US	键盘布局 US(美国)
DE	键盘布局 德国
FR	键盘布局 法国
DK	键盘布局 丹麦
SL	键盘布局 斯洛文尼亚
ES	键盘布局 西班牙
SE	键盘布局 瑞典
JP	键盘布局 日本
00	无键盘布局
HSG:	**外壳**
HSG	外壳
H:	**密封**
1	密封 1
2	密封 2
II:	**外壳材料**
V2	外壳材料 V2A
V4	外壳材料 V4A
J:	**涂层**
N	无涂层
P	涂层
M	金属涂层

颁发日期：2023 年 04 月 29 日

主任：

南阳防爆电气研究所有限公司

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中国国家强制性产品认证证书
（附页）

编　号：2021312309000476

KKK: **安装选项**
M## 安装选项
B## 后盖类型

L: **设计选项**（与防爆无关）

S 标准
G GMP 选项

MM: 附件
00 无附件
U3 UB03

* 由字符和数字代替以区分型号，不影响防爆性能。

\# 由字符和数字代替以区分型号，不影响防爆性能。

参数：

电气参数：

型号 PD2-Z1-***-**-**-*-**-HSG * ** * *** * ** *(定点设备)：

通过最大长度为 5 m 的永久连接电缆供电。

对于 8 线电缆：+5V（5 代表红色），USB-m（7 代表灰色），USB_p（8 代表粉色）和 GND（6 代表蓝色）。对于 4 线电缆：+5V（1 代表白色），USB-m（2 代表绿色），USB_p（3 代表黄色）和 GND（4 代表棕色）。

最大输入电压 U_i	5.9 V DC
最大输入电流 I_i	
对于 II 类	319 mA
对于 III 类、ia	319 mA
对于 III 类、ib	250 mA

颁发日期：2023 年 04 月 29 日

主任：穆大玉

南阳防爆电气研究所有限公司

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中国国家强制性产品认证证书
（附页）

编　号：2021312309000476

第 4 页 共 8 页

最大输入功率 P_i	650 mW
有效内部电容 C_i	21 μF
有效内部电感 L_i	1.68 μH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200 pF/m
电缆电感 L_c	1 μH/m

型号 KB2-Z1-***-00-**-*-**-HSG * ** * *** * ** *(不带定点设备的键盘)：

通过最大长度为 5 米的永久连接电缆供电。

电线：+5V (1 代表白色), USB-m (2 代表绿色), USB_p (3 代表黄色)和 GND (4 代表棕色)。

最大输入电压 U_i	5.9 V DC
最大输入电流 I_i	
对于 II 类	319 mA
对于 III 类、ia	319 mA
对于 III 类、ib	250 mA
最大输入功率 P_i	650 mW
有效内部电容 C_i	21 μF
有效内部电感 L_i	1.68 μH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200 pF/m
电缆电感 L_c	1 μH/m

颁发日期：2023 年 04 月 29 日

主任：穆大玉

南阳防爆电气研究所有限公司

CNEX CCC

CNAS 中国认可 产品 PRODUCT CNAS C208-P

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邮箱：ccc@cn-ex.com

中国国家强制性产品认证证书
（附页）

编　号：2021312309000476

型号 KB2-Z1-***-TB-**-*-**-HSG * ** * *** * ** * ，
型号 KB2-Z1-***-TP-**-*-**-HSG * ** * *** * ** * ，
型号 KB2-Z1-***-JS-**-*-**-HSG * ** * *** * ** * (带定点设备的键盘)：

通过 8 线永久连接电缆提供 2 个独立的本安电路，最大长度为 5 m。

键盘电路：

电线：+5V (1 代表白色), USB-m (2 代表绿色), USB_p (3 代表黄色)和 GND (4 代表棕色)。

最大输入电压 U_i	5.9 V DC
最大输入电流 I_i	
对于 II 类	319 mA
对于 III 类、ia	319 mA
对于 III 类、ib	250 mA
最大输入功率 P_i	650 mW
有效内部电容 C_i	21 µF
有效内部电感 L_i	1.68 µH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200 pF/m
电缆电感 L_c	1 µH/m

定点设备电路：

电线：+5V (5 代表红色), USB-m (7 代表灰色), USB_p (8 代表粉色)和 GND (6 代表蓝色)。

最大输入电压 U_i	5.9 V DC
最大输入电流 I_i	
对于 II 类	319 mA

颁发日期：2023 年 04 月 29 日

主任：穆大玉

南阳防爆电气研究所有限公司

CNEX CCC

CNAS 中国认可 产品 PRODUCT CNAS C208-P

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电话：0377-63239734
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邮箱：ccc@cn-ex.com

中国国家强制性产品认证证书
（附页）

编　号：2021312309000476

对于 III 类、ia	319 mA
对于 III 类、ib	250 mA
最大输入功率 P_i	650 mW
有效内部电容 C_i	21 μF
有效内部电感 L_i	1.68 μH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200 pF/m
电缆电感 L_c	1 μH/m

型号 ***-Z1-***-**-**-*-**-HSG * ** * *** * U3 *(附件 UB03)：

接线端子 X1，插脚 1	
非本质安全供电电路（电源）	
额定电压	5~30V DC
额定电流	≤ 1 A
额定功率	≤ 30 W
最大输入电压 U_m	250V AC
接线端子 X1，插脚 2 和 3	
非本质安全接口数据	
额定电压	5V AC/DC
最大输入电压 U_m	250V AC
接线端子 X1，插脚 2 和 3（仅适用于"UB03-*-RFID-*-RS422*"）	
非本质安全接口数据	
最大电压	30V AC/DC

颁发日期：2023 年 04 月 29 日

主任：穆大王

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中国国家强制性产品认证证书
（附页）

编　号：2021312309000476

最大电流	≤ 1 A
接线端子 X1，插脚 2 和 3（仅适用于"UB03-*-AMP Audio*"和"UB03-*-DSP-10*"）	
非本质安全接口数据	
最大输出电压	30V AC/DC

接线端子 X2	
非本质安全接口数据	
额定电压	5V AC/DC
最大输入电压 U_m	250V AC

环境温度：-40℃ ~ +70℃

防爆标志：

型号 KB2-Z1-...-HSG...00... 和 PD2-Z1-...-HSG…00…：

当连接到 ia 电路时：Ex ia IIC T4 Gb, Ex ia IIIC T_{200} 135℃ Db

当连接到 ib 电路时：Ex ib IIC T4 Gb, Ex ib IIIC T_{200} 135℃ Db

当连接到 ic 电路时：Ex ic IIC T4 Gc

型号 KB2-Z1-...-HSG...U3...和 PD2-Z1-...-HSG…U3…：

当连接到 ia 电路时：Ex eb ia q IIC T4 Gb, Ex ia tb IIIC T135°C Db

当连接到 ib 电路时：Ex eb ib q IIC T4 Gb, Ex ib tb IIIC T135°C Db

当连接到 ic 电路时：Ex eb ic q IIC T4 Gc

- 生产者应按照认证机构批准的技术文件组织生产。

2、安全使用条件：

颁发日期：2023 年 04 月 29 日

主任：

南阳防爆电气研究所有限公司

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中国国家强制性产品认证证书
（附页）

编　号：2021312309000476

- 外壳防护等级：IP66。
- 型号 KB2-Z1-... 和 PD2-Z1-...：
  - ●当在粉尘爆炸区域供电>250 mA 时：设备必须由 ia 电路供电（线性特性）。
- 型号 KB2-Z1-***-TB-**-*-**-HSG * ** * *** * ** *、KB2-Z1-***-TP-**-*-**-HSG * ** * *** * ** *和 KB2-Z1-***-JS-**-*-**-HSG * ** * *** * ** *：
  - ●连接电缆包含 2 个独立的本安电路。
  - ●该设备的安装方式必须排除电缆上的机械影响（拉力）。
  - ●电缆必须固定并有防止损坏措施。
- 该设备（包括连接电缆）不能安装在强静电充电过程的区域。
- 外壳必须接地，接地电阻小于 1MΩ。如果适用，可使用安装部件或已安装部件的接地。
- 对于型号 KB2-*-HSG*U3*或 PD2-*-HSG*U3*，UB03 连接必须使用绝缘层至少为 0.5 mm 的连接电缆（导线/外护套）。连接电缆必须安装在外壳中，确保与键盘/定点设备的裸露导电部件之间至少有 50 mm 的距离。
- 其他见产品使用说明书。

3、证书关联报告：

- 产品型式试验报告：CQST2103C003, CQST2103C003/01
- 工厂检查报告：CN2023Q030119

4、证书变更信息：

- 2023 年 04 月 29 日第 1 次变更：产品认证依据标准变更。

颁发日期：2023 年 04 月 29 日

主任：穆大玉

南阳防爆电气研究所有限公司

CNEX CCC

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5.2 CNEx

5.2.1 KB2 / PD2 – Z1

5.2.1.1 English version

Certificate number: CNEx21.1931X

CNEX 国家防爆

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Manufacturer	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Koln, Germany
Product	Keyboard with pointing device, Pointing device, Keyboard matrix interface
Type	KB2-Z1-CCC-DD-EE-F-GG*,PD2-Z1-CCC-DD-EE-F-GG*,KM2-Z1-CCC-DD-EE-F-GG*
Marking	See Annex
Standard(s)	——
Drawing No.	10591300 Rev00 KB2-Cert. Variant overview

The drawings, technical documents and the samples are verified and certified according to standard(s) for safety as below:

GB 3836.1-2010	Explosive atmospheres - Part 1: Equipment - General requirements
GB 3836.4-2010	Explosive atmospheres - Part 4:Equipment protection by intrinsic safety "i"
GB12476.1-2013	Electrical apparatus for use in the presence of combustible dust - Part 1:General requirements
GB12476.4-2010	Electrical apparatus for use in the presence of combustible dust - Part 4:Protection by intrinsic safety "iD"

Note:

See Annex (6 page in total).

Director **Date:** 2021-6-17

Valid until: 2026-6-16

Ex CQST

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Tel: 0377-63258564 Fax: 0377-63208175 Web: www.china-ex.com

Note: This certificate is only valid for products which identify with the sample(s) tested and verified. Holder(s) of this certificate have the responsibility to ensure the products complying with relevant standard(s). 登录网站 输入数码 查询防伪 3607 2409 8842 2663

CNEX
国家防爆

Certificate number: CNEx21.1931X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

This product has been certified, under certificate number IECEx BVS 20.0065X, issue 0, dated 2020-10-19 and Test report DE/BVS/ExTR20.0062/00 dated 2020-09-18.

Product Description:

The Human Interface Devices (HiDs) KB2-.. ., PD2-.. . and KM2-.. . are used for connection to PCs or similar devices in hazardous areas. The HIDs are intrinsically safe apparatus. The variants KB2-Z1-.. ., PD2-Z1-.. . and KM2-Z1 -... are suitable for use in areas requiring EPL Gb. Tl1ey have level of protection ia, when connected to an ia-circuit. When conneted to an ib-circuit, they have level of protection ib. When connected to an ic-circuit, they have level of protection ic and are suitable for areas requiring EPL Gc.

Type designation:

- KB2-Z1-CCC-DD-EE-F-GG*,PD2-Z1-CCC-DD-EE-F-GG*,
KM2-Z1-CCC-DD-EE-F-GG*
Subject and Type:
Types AAA-BB-CCC-DD-EE-F-GG *
In the complete type denomination, the wild cards A-G are replaced by the following characters and numbers to distinguish different variants.

AAA:	**Type**
KB2	Keyboard with pointing device
PD2	Pointing device only
KM2	Keyboard matrix interface
BB:	**Zone**
Z1	For use in Zone 1, 2, 21, 22
CCC:	**Type of interface (not Ex-relevant)**
USB	USB
PS2	PS2
DD:	**Type of pointing device**
00	No pointing device
TB	Trackball
TP	Touchpad
JS	Joystick
EE:	**Front plate material**
AP	Aluminium coated
AL	Aluminium anodized

Director

Date: 2021-6-17

Valid until: 2026-6-16

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Certificate number: CNEx21.1931X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

V2	Stainless steel
V4	Stainless steel
ST	Steel
F:	**Surface front foil**
P	Polyester foil
V	Metallic foil
GG:	**Layout (not Ex-relevant)**
CN	keyboard layout CN (China)
US	keyboard layout US-American
DE	keyboard layout German
FR	keyboard layout French
DK	keyboard layout Denmark
SL	keyboard layout Slovenia
ES	keyboard layout Spain
SE	keyboard layout Sweden
JP	keyboard layout Japan
00	no keyboard layout

The * is replaced by characters and numbers to distinguish variations with no influence to explosion protection.

Parameters:

Electrical parameters:

Type PD2-Z1-***-**-**-*-** *(Pointing device):
Supply via a permanently connected cable with max. 5 m length.
Wires： for 8-wire cable: +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6).
for 4-wire cable: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Director

Date: 2021-6-17

Valid until: 2026-6-16

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国家防爆

Certificate number: CNEx21.1931X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Maximum input voltage U_i	5.9V DC
Maximum input current I_i	
For Group II	319mA
For Group dust, iaD	319mA
For Group dust, ibD	250mA
Maximum input power P_i	650mW
Effective internal capacitance C_i	21µF
Effective internal inductance L_i	1.68µH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200pF/m
Cable inductance L_c	1µH/m

Type KB2-Z1-***-00-**-*-** *(Keyboard without Pointing Device) :
Supply via a permanently connected cable with max. 5 m length.
Wires: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Maximum input voltage U_i	5.9V DC
Maximum input current I_i	
For Group II	319mA
For Group dust, iaD	319mA
For Group dust, ibD	250mA
Maximum input power P_i	650mW
Effective internal capacitance C_i	21µF
Effective internal inductance L_i	1.68µH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200pF/m
Cable inductance L_c	1µH/m

Type KB2-Z1-***-TB-**-*-** *, Type KB2-Z1-***-TP-**-*-** *, Type KB2-Z1-***-JS-**-*-** *:
(Keyboard with Pointing Device)
Supply with 2 separate intrinsically safe circuits via an 8-wire permanently connected cable with max. 5 m length.

Director **Date:** 2021-6-17

Valid until: 2026-6-16

国家防爆电气产品质量监督检验中心

Ex CQST

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CNEX 国家防爆

Certificate number: CNEx21.1931X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Keyboard-circuit :

Wires: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Maximum input voltage U_i	5.9V DC
Maximum input current I_i	
For Group II	319mA
For Group dust, iaD	319mA
For Group dust, ibD	250mA
Maximum input power P_i	650mW
Effective internal capacitance C_i	21µF
Effective internal inductance L_i	1.68µH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200pF/m
Cable inductance L_c	1µH/m

Pointing Device-Circuit :

Wires: +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6).

Maximum input voltage U_i	5.9V DC
Maximum input current I_i	
For Group II	319mA
For Group dust, iaD	319mA
For Group dust, ibD	250mA
Maximum input power P_i	650mW
Effective internal capacitance C_i	21µF
Effective internal inductance L_i	1.68µH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200pF/m
Cable inductance L_c	1µH/m

Director

Date: 2021-6-17

Valid until: 2026-6-16

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Certificate number: CNEx21.1931X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Type KM2-Z1-***-**-**-*-** *(Keyboard Matrix):

Supply:
Terminal block X1
Terminals:+5V (1), USB_m (2), USB_p (3), GND (4).

Maximum input voltage U_i	5.9V DC
Maximum input current I_i	
For Group II	319mA
For Group dust, iaD	319mA
For Group dust, ibD	250mA
Maximum input power P_i	650mW
Effective internal capacitance C_i	20.5µF
Effective internal inductance L_i	1.68µH
Terminal 5 is intended for connection of a cable shield.	

Terminals for connection of an external keyboard:
Terminal blocks X2, X3, X4:
(The signals at all 3 terminal blocks are regarded as 1 intrinsically safe circuit)

Maximum output voltage U_o	$=U_i$
Maximum output current I_o	250 mA
Maximum output power P_o	$= P_i$
Maximum external capacitance C_o	0.5µF
Maximum external inductance L_o	0.5µH

Ambient temperature: -40℃~70℃

Ex marking:

Type KB2-Z1-... ,Type PD2-Z1-... ,Type KM2-Z1-... :

When connected to an ia-circuit: Ex ia IIC T4 Gb/Ex iaD 21 T_{200} 135℃

When connected to an ib-circuit: Ex ib IIC T4 Gb/Ex ibD 21 T_{200} 135℃

When connected to an ic-circuit: Ex ic IIC T4 Gc

Director **Date:** 2021-6-17

Valid until: 2026-6-16

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Certificate number: CNEx21.1931X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Specific conditions of safety use:

- Type KB2-Z1-···· and type PD2-Z1-···· :

● For use in gas-explosive areas, the devices must be installed in a suitable enclosure to obtain at least IP20 in accordance with GB/T4208.

- Type KB2-Z1-···· and type PD2-Z1-···· and KM2-Z1-···· :

● When used in dust-explosive areas, the device has to be installed in a suitable enclosure to obtain at least IP64 in accordance with GB12476.1.

● When supplied with > 250 mA in dust-explosive areas: The device must be supplied by an ia-circuit (linear characteristics).

- Type KB2-Z1-***-TB-**-*-** * and type KB2-Z1-***-TP-**-*-** * and type KB2-Z1-***-JS-**-*-** *:

● The connection cable contains 2 separate intrinsically safe circuits.

● The device has to be installed in such a way that mechanical effects (pulling forces) on the cable are excluded.

● The cable has to be fixed and effectively protected against damage.

- The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.

Director

Date: 2021-6-17

Valid until: 2026-6-16

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5.2.1.2 Chinese version

编号：CNEx21.1931X

CNEX
国家防爆

防爆合格证

制造单位	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Koln, Germany
产品名称	防爆键盘
型号规格	KB2-Z1-CCC-DD-EE-F-GG*, PD2-Z1-CCC-DD-EE-F-GG*, KM2-Z1-CCC-DD-EE-F-GG*
防爆标志	见附页
产品标准	——
总装图号	10591300 Rev00 KB2-Cert. Variant overview

经对上述产品图样及技术文件的审查和样品检验,确认符合下列标准：
GB3836.1-2010《爆炸性环境　第 1 部分：设备　通用要求》
GB3836.4-2010《爆炸性环境　第 4 部分：由本质安全型“i”保护的设备》
GB12476.1-2013《可燃性粉尘环境用电气设备　第 1 部分：通用要求》
GB12476.4-2010《可燃性粉尘环境用电气设备　第 4 部分：本质安全型“iD”》

记事：见附页（共 5 页）。

中心主任

颁发日期　2021 年 6 月 17 日

本证有效期　2021 年 6 月 17 日至 2026 年 6 月 16 日

Ex CQST 国家防爆电气产品质量监督检验中心
南阳防爆电气研究所

地址：中国河南省南阳市仲景北路20号
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传真：0377-63208175
网址：www.china-ex.com

公众号

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南阳防爆电气研究所

南阳防爆电气研究所有限公司

强制性认证

IECEx认证

自愿性认证

南阳防爆电气研究所国际认证中心（CNEX-GLOBAL B.V.）

IECEx 认证

ATEX 认证

国家防爆电气产品质量监督检验中心（CQST）

IECEx TL国际实验室

美国能源部电动机效率实验室 (NVLAP)

国家安全生产检测检验机构

中国人民解放军军工产品检验机构

船用防爆电气产品检验实验室

国家中小型电机节能认证检验实验室

机械工业防爆电气产品质量监督检验中心

国家地方联合工程实验室

国家车辆特种性能质量监督检验中心（CNV）

全国防爆电气设备标准化技术委员会秘书处

IEC TC31技术委员会 中国办公室

中国电器工业协会防爆电机分会

中国电工技术学会防爆电气技术专业委员会

爆炸危险场所工程设备监理中心

CNEX
国家防爆

编号：CNEx21.1931X

防爆合格证 （附页）

共 5 页 第 1 页

本产品已取得 IECEx 认证，证书号：IECEx BVS 20.0065X，0 版，2020.10.19 颁发,报告号为：DE/BVS/ExTR20.0062/00，2020.09.18 颁发。

产品描述：
人机接口设备（HiDs）KB2-..，PD2 -.....和 KM2- ..用于连接到危险区域的 PCs 或类似设备。HIDs 是本质安全设备。型号 KB2-Z1 -...，PD2-Z1 -...和 KM2-Z1 -...适用于设备保护级别为 Gb 的区域。连接到 ia 电路时，保护级别为 ia。连接到 ib 电路时，保护等级为 ib。当连接到 ic 电路时，保护等级为 ic，适用于设备保护级别为 Gc 的区域。

型号名称：
- KB2-Z1-CCC-DD-EE-F-GG *，PD2-Z1-CCC-DD-EE-F-GG *，
KM2-Z1-CCC-DD-EE-F-GG *
型号命名：
型号 AAA-BB-CCC-DD-EE-F-GG *
在完整的型号命名中，A-G 被以下字符和数字所取代，以区分不同的型号。

AAA:	**型号**
KB2	带指点设备的键盘
PD2	仅限指点设备
KM2	矩阵键盘接口界面
BB:	**区域**
Z1	用于 1、2、21、22 区
CCC:	**接口类型（与防爆不相关）**
DD:	**指点设备型号**
00	无指点设备
TB	轨迹球
TP	触摸板
JS	操纵杆
EE:	**前板材料**
AP	铝涂层
AL	铝阳极氧化
V2	不锈钢
V4	不锈钢
ST	钢
F:	**表面前膜**
P	聚酯膜
V	金属膜

中心主任

颁发日期 2021年6月17日

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防爆合格证 （附页）

GG:	**布局 (与防爆无关)**
CN	键盘布局 CN (中国)
US	键盘布局 US(美国)
DE	键盘布局 德国
FR	键盘布局 法国
DK	键盘布局 丹麦
SL	键盘布局 斯洛文尼亚
ES	键盘布局 西班牙
SE	键盘布局 瑞典
JP	键盘布局 日本
00	无键盘布局

*由字符和数字代替以区分型号，不影响防爆性能。

参数：
电气参数：
型号 PD2-Z1-***-**-**-*-** *(指点设备):
通过最大长度为 5 m 的永久连接电缆供电。
对于 8 线电缆：+5V（5 代表红色），USB-m（7 代表灰色），USB_p（8 代表粉色）和 GND（6 代表蓝色）。
对于 4 线电缆：+5V（1 代表白色），USB-m（2 代表绿色），USB_p（3 代表黄色）和 GND（4 代表棕色)。

最大输入电压 U_i	5.9V DC
最大输入电流 I_i	
对于 II 类	319mA
对于粉尘类、iaD	319mA
对于粉尘类、ibD	250mA
最大输入功率 P_i	650mW
有效内部电容 C_i	21μF
有效内部电感 L_i	1.68μH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200pF/m
电缆电感 L_c	1μH/m

型号 KB2-Z1-***-00-**-*-** *(不带指点设备的键盘)：

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防爆合格证 （附页）

通过最大长度为 5 米的永久连接电缆供电。
电线：+5V (1 代表白色), USB-m (2 代表绿色), USB_p (3 代表黄色)和 GND (4 代表棕色)。

最大输入电压 U_i	5.9V DC
最大输入电流 I_i	
对于 II 类	319mA
对于粉尘类、iaD	319mA
对于粉尘类、ibD	250mA
最大输入功率 P_i	650mW
有效内部电容 C_i	21μF
有效内部电感 L_i	1.68μH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200pF/m
电缆电感 L_c	1μH/m

型号 KB2-Z1-***-TB-**-*-** *, KB2-Z1-***-TP-**-*-** *, KB2-Z1-***-JS-**-*-** *:
(带指点设备的键盘)
通过 8 线永久连接电缆提供 2 个独立的本安电路，最大长度为 5 m。
键盘电路：
电线：+5V (1 代表白色), USB-m (2 代表绿色), USB_p (3 代表黄色)和 GND (4 代表棕色)。

最大输入电压 U_i	5.9V DC
最大输入电流 I_i	
对于 II 类	319mA
对于粉尘类、iaD	319mA
对于粉尘类、ibD	250mA
最大输入功率 P_i	650mW
有效内部电容 C_i	21μF
有效内部电感 L_i	1.68μH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200pF/m
电缆电感 L_c	1μH/m

中心主任

颁发日期 2021 年 6 月 17 日

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指点设备电路：
电线：+5V (5 代表红色), USB-m (7 代表灰色), USB_p (8 代表粉色)和 GND (6 代表蓝色)。

最大输入电压 U_i	5.9V DC
最大输入电流 I_i	
对于 II 类	319mA
对于粉尘类、iaD	319mA
对于粉尘类、ibD	250mA
最大输入功率 P_i	650mW
有效内部电容 C_i	21μF
有效内部电感 L_i	1.68μH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200pF/m
电缆电感 L_c	1μH/m

型号 KM2-Z1-***-**-**-*-** *(键盘线路)：
供电电路：
接线端子 X1
端子：+5V (1), USB_m (2), USB_p (3), GND (4)

最大输入电压 U_i	5.9V DC
最大输入电流 I_i	
对于 II 类	319mA
对于粉尘类、iaD	319mA
对于粉尘类、ibD	250mA
最大输入功率 P_i	650mW
有效内部电容 C_i	20.5μF
有效内部电感 L_i	1.68μH
端子 5 用于电缆屏蔽的连接	

连接外部键盘的端子：

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共 5 页 第 5 页

接线端子 X2, X3, X4：
（3 个接线端子处的信号均视为 1 个本安电路）

最大输出电压 U_o	=Ui
最大输出电流 I_o	250 mA
最大输出功率 P_o	= Pi
最大外部电容 C_o	0.5μF
最大外部电感 L_o	0.5μH

环境温度: -40℃~70℃

防爆标志：

型号 KB2-Z1-…，PD2-Z1-…，KM2-Z1-…：

当连接到 ia 电路时：Ex ia IIC T4 Gb/Ex iaD 21 T200 135℃

当连接到 ib 电路时：Ex ib IIC T4 Gb/Ex ibD 21 T200 135℃

当连接到 ic 电路时：Ex ic IIC T4 Gc

安全使用条件：

- 型号 KB2-Z1-… 和 PD2-Z1-…：

●对于用于爆炸性气体环境，必须将设备安装在最低防护等级为 IP20（GB/T4208）的外壳中。

- 型号 KB2-Z1-…， PD2-Z1-…和 KM2-Z1-…：

●对于用于爆炸性粉尘环境，必须将设备安装在最低防护等级为 IP64（GB12476.1）的外壳中。

●当在粉尘爆炸区域供电>250 mA 时：设备必须由 ia 电路供电（线性特性）。

- 型号 KB2-Z1-***-TB-**-*-** *，KB2-Z1-***-TP-**-*-** *和 KB2-Z1-***-JS-**-*-** *：

●连接电缆包含 2 个独立的本安电路。

●该设备的安装方式必须排除电缆上的机械影响（拉力）。

●电缆必须固定并有防止损坏措施。

- 该设备（包括连接电缆）不能安装在强静电充电过程的区域。

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5.2.2 KB2 / PD2 -*-HSG*00* / *U3*

5.2.2.1 English version

Certificate number: CNEx21.1934X

CNEX 国家防爆

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Manufacturer	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Koln, Germany
Product	Keyboard
Type	KB2-Z1-...-HSG..., PD2-Z1-...-HSG...
Marking	See Annex
Standard(s)	——
Drawing No.	10591350 Rev01 HSG-KB2-Cert. Housing overview

The drawings, technical documents and the samples are verified and certified according to standard(s) for safety as below:

GB 3836.1-2010	Explosive atmospheres - Part 1: Equipment - General requirements
GB 3836.3-2010	Explosive atmospheres - Part 3: Equipment protection by increased safety "e"
GB 3836.4-2010	Explosive atmospheres - Part 4:Equipment protection by intrinsic safety "i"
GB/T 3836.7-2017	Explosive atmospheres - Part 7:Equipment protection by powder filling "q"
GB12476.1-2013	Electrical apparatus for use in the presence of combustible dust - Part 1:General requirements
GB12476.4-2010	Electrical apparatus for use in the presence of combustible dust - Part 4:Protection by intrinsic safety "iD"
GB12476.5-2013	Electrical apparatus for use in the presence of combustible dust - Part 5:Protection by enclosure "tD"

Note:

See Annex (6 page in total).

Director

Date: 2021-6-17

Valid until: 2026-6-16

Ex CQST

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Address: No.20 North Zhongjing Rd, Nanyang, Henan(473008), P.R.China

Tel: 0377-63258564 Fax: 0377-63208175 Web: www.china-ex.com

Note: This certificate is only valid for products which identify with the sample(s) tested and verified. Holder(s) of this certificate have the responsibility to ensure the products complying with relevant standard(s). 登录网站 输入数码 查询防伪 4208 4509 8046 7260

CNEX
国家防爆

Certificate number: CNEx21.1934X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

This product has been certified, under certificate number IECEx BVS 20.0084X, issue 0, dated 2020−12−11 and Test report DE/BVS/ExTR20.0083/00 dated 2020-12-07.

Product Description:

The Keyboard with Pointing Device and enclosure and the Pointing Device (Human interface devices) are used for connection to PCs or similar devices in hazardous areas.

Type designation:

Keyboard with pointing device and enclosure: KB2-Z1-...-HSG..., Pointing device: PD2-Z1-...-HSG...
Subject and Type:
AAA-BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM *
In the complete type denomination, the wild cards A-M are replaced by the following characters and numbers to distinguish different variants.

AAA:	**Type**
KB2	Keyboard with pointing device
PD2	Pointing device only
BB:	**Zone**
Z1	For use in Zone 1, 2, 21, 22
CCC:	**Type of interface**
USB	USB
PS2	PS2
DD:	**Type of pointing device**
00	no pointing device
TB	Trackball
TP	Touchpad
JS	Joystick
EE:	**Front plate material**
AP	Aluminium coated
AL	Aluminium anodized
V2	Stainless steel
V4	Stainless steel
ST	Steel
F:	**Surface front foil**
P	Polyester foil
V	Metallic foil

Director

Date: 2021-6-17

Valid until: 2026-6-16

Ex CQST

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CNEX 国家防爆

Certificate number: CNEx21.1934X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

GG:	**Layout (not Ex-relevant)**
CN	keyboard layout CN (China)
US	keyboard layout US-American
DE	keyboard layout German
FR	keyboard layout French
DK	keyboard layout Denmark
SL	keyboard layout Slovenia
ES	keyboard layout Spain
SE	keyboard layout Sweden
JP	keyboard layout Japan
00	no keyboard layout
HSG:	**Housing**
HSG	Housing
H:	**Sealing**
1	Sealing 1
2	Sealing 2
II:	**Housing material**
V2	Enclosure material V2A
V4	Enclosure material V4A
J:	**Coating**
N	no coating
P	coating
M	Metallic coating
KKK:	**Mounting option**
M##	mounting options
B##	backcover type
L:	**Design option (not Ex-relevant)**
S	Standard
G	GMP-option
MM:	**Accessory**
00	no accessory
U3	UB03

The * is replaced by characters and numbers to distinguish variations with no influence to explosion protection.

The # is replaced by one character or number to distinguish variations with no influence to explosion protection.

Director **Date:** 2021-6-17

Valid until: 2026-6-16

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CNEX
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Certificate number: CNEx21.1934X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Parameters:

Electrical parameters:
Type PD2-Z1-***-**-**-*-**-HSG * ** * *** * ** *(Pointing device) :
Supply via a permanently connected cable with max. 5 m length.
Wires for 8-wire cable: +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6) for 4-wire cable: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Maximum input voltage U_i	5.9 V DC
Maximum input current I_i	
For Group II	319 mA
For Group dust, iaD	319 mA
For Group dust, ibD	250 mA
Maximum input power P_i	650 mW
Effective internal capacitance C_i	21 µF
Effective internal inductance L_i	1.68 µH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance C_c	200 pF/m
Cable inductance L_c	1 µH/m

Type KB2-Z1-***-00-**-*-**-HSG * ** * *** * ** *(Keyboard without Pointing Device) :
Supply via a permanently connected cable with max.5m length.
Wires: +5V (white resp.1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Director **Date:** 2021-6-17

Valid until: 2026-6-16

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CNEX 国家防爆

Certificate number: CNEx21.1934X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Maximum input voltage Ui	5.9 V DC
Maximum input current Ii	
For Group II	319 mA
For Group dust, iaD	319 mA
For Group dust, ibD	250 mA
Maximum input power Pi	650 mW
Effective internal capacitance Ci	21 µF
Effective internal inductance Li	1.68 µH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance Cc	200 pF/m
Cable inductance Lc	1 µH/m

Type KB2-Z1-***-TB-**-*-**-HSG * ** * *** * ** * , Type KB2-Z1-***-TP-**-*-**-HSG * ** * *** * ** * , Type KB2-Z1-***-JS-**-*-**-HSG * ** * *** * ** * (Keyboard with Pointing Device):
Supply with 2 separate intrinsically safe circuits via an 8-wire permanently connected cable with max. 5 m length.
Keyboard-circuit :
Wires: +5V (white resp. 1), USB-m (green resp. 2), USB_p (yellow resp. 3) and GND (brown resp. 4).

Maximum input voltage Ui	5.9 V DC
Maximum input current Ii	
For Group II	319 mA
For Group dust, iaD	319 mA
For Group dust, ibD	250 mA
Maximum input power Pi	650 mW
Effective internal capacitance Ci	21 µF
Effective internal inductance Li	1.68 µH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance Cc	200 pF/m
Cable inductance Lc	1 µH/m

Pointing Device-Circuit:

Director

Date: 2021-6-17

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Electrical Apparatus for Explosive Atmospheres

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Wires :+5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6).

Maximum input voltage Ui	5.9 V DC
Maximum input current Ii	
For Group II	319 mA
For Group dust, iaD	319 mA
For Group dust, ibD	250 mA
Maximum input power Pi	650 mW
Effective internal capacitance Ci	21 µF
Effective internal inductance Li	1.68 µH
For the permanently connected cable, the following values have to be respected additionally:	
Cable capacitance Cc	200 pF/m
Cable inductance Lc	1 µH/m

Type ***-Z1-***-**-**-*-**-HSG * ** * *** * U3 *(Accessory UB03) :

Terminal block X1, pin1	
Non-intrinsically safe supply circuit (Power)	
Nominal voltage	5~30V DC
Nominal current	⩽ 1 A
Nominal power	⩽ 30 W
Max. input voltage Um	250V AC
Terminal block X1, pin 2 and 3	
Non-intrinsically safe interfaces data	
Nominal voltage	5V AC/DC
Max. input voltage Um	250V AC
Terminal block X1, pin 2 and 3 (for "UB03-*-RFID-*-RS422*" only)	
Non-intrinsically safe interfaces data	
Max. voltage	30V AC/DC
Max. current	⩽ 1 A
Terminal block X1, pin 2 and 3 (for "UB03-*-AMP-Audio*" and "UB03-*-DSP-10*" only)	
Non-intrinsically safe interfaces data	
Max. output voltage	30V AC/DC

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Certificate number: CNEx21.1934X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Terminal block X2	
Non-intrinsically safe interfaces data	
Nominal voltage	5V AC/DC
Max. input voltage Um	250V AC

Rated ambient temperature range: -40℃ up to +70℃

Ex marking:
Type KB2-Z1-...-HSG...00... and Type PD2-Z1-...-HSG...00... :
When connected to an ia-circuit: Ex ia IIC T4 Gb/Ex iaD 21 T_{200} 135℃
When connected to an ib-circuit: Ex ib IIC T4 Gb/Ex ibD 21 T_{200} 135℃
When connected to an ic-circuit: Ex ic IIC T4 Gc
Type KB2-Z1-...-HSG...U3... and Type PD2-Z1-...-HSG...U3... :
When connected to an ia-circuit: Ex e ia q IIC T4 Gb/
Ex tD A21 IP 66 T135℃+Ex iaD 21 T135℃
When connected to an ib-circuit: Ex e ib q IIC T4 Gb/
Ex tD A21 IP 66 T135℃+Ex ibD 21 T135℃
When connected to an ic-circuit: Ex e ic q IIC T4 Gc

Specific conditions of safety use:

- Type KB2-Z1-... and type PD2-Z1-... :
● When supplied with > 250 mA in dust-explosive areas: The device must be supplied by an ia-circuit (linear characteristics).
- Type KB2-Z1-***-TB-**-*-**-HSG * ** * *** * ** *, Type KB2-Z1-***-TP-**-*-**-HSG * ** * *** * ** *, Type KB2-Z1-***-JS-**-*-**-HSG * ** * *** * ** *:
● The connection cable contains 2 separate intrinsically safe circuits.
● The device has to be installed in such a way that mechanical effects (pulling forces) on the cable are excluded.
● The cable has to be fixed and effectively protected against damage.
- The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.
- The enclosure, must be connected to earth potential with max. 1MΩ. If applicable, the mounting components or the earth of mounted components can be used for this.
- For the variants KB2-*-HSG*U3* or PD2-*-HSG*U3* a connecting cable with min. 0.5 mm insulation (conductor / outer sheath) must be used for the UB03 connection. The connecting cable must be installed in the housing in such a way that a distance of min. 50 mm to bare conductive parts of the keyboard / pointing device is ensured.

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5.2.2.2 Chinese version

编号：CNEx21.1934X

CNEX 国家防爆

防爆合格证

制造单位	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Koln, Germany
产品名称	防爆键盘
型号规格	KB2-Z1-...-HSG..., PD2-Z1-...-HSG...
防爆标志	见附页
产品标准	——
总装图号	10591350 Rev01 HSG-KB2-Cert. Housing overview

经对上述产品图样及技术文件的审查和样品检验,确认符合下列标准：
GB3836.1-2010《爆炸性环境　第 1 部分：设备　通用要求》
GB3836.3-2010《爆炸性环境　第 3 部分：由增安型“e”保护的设备》
GB3836.4-2010《爆炸性环境　第 4 部分：由本质安全型“i”保护的设备》
GB/T3836.7-2017《爆炸性环境　第 7 部分：由充砂型“q”保护的设备》
GB12476.1-2013《可燃性粉尘环境用电气设备　第 1 部分：通用要求》
GB12476.4-2010《可燃性粉尘环境用电气设备　第 4 部分：本质安全型“iD”》
GB12476.5-2013《可燃性粉尘环境用电气设备　第 5 部分：外壳保护型“tD”》

记事：见附页（共 6 页）。

中心主任

颁发日期　2021年6月17日

本证有效期　2021年6月17日至2026年6月16日

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美国能源部电动机效率实验室 (NVLAP)

国家安全生产检测检验机构

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中国电器工业协会防爆电机分会

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CNEX 国家防爆

编号：CNEx21.1934X

防爆合格证 （附页）

本产品已取得 IECEx 认证，证书号：IECEx BVS 20.0084X，0 版，2020.12.11 颁发,报告号为：DE/BVS/ExTR20.0083/00，2020.12.07 颁发。

产品描述：
带有指点设备和外壳的键盘以及指点设备（人机界面设备）用于连接危险区域的 PC 或类似设备。

型号名称：
- KB2-Z1-...-HSG... ， PD2-Z1-...-HSG...

型号命名：
AAA-BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM *
在完整的型号命名中，A-M 被以下字符和数字所取代，以区分不同的型号。

AAA:	**型号**
KB2	带指点设备的键盘
PD2	仅限指点设备
BB:	**区域**
Z1	用于 1、2、21、22 区
CCC:	**接口类型**
USB	USB
PS2	PS2
DD:	**定点设备类型**
00	无指点设备
TB	轨迹球
TP	触摸板
JS	操纵杆
EE:	**前板材料**
AP	铝涂层
AL	铝阳极氧化
V2	不锈钢
V4	不锈钢
ST	钢
F:	**表面前膜**
P	聚酯膜
V	金属膜

中心主任

颁发日期 2021 年 6 月 17 日

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中国电器工业协会防爆电机分会

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爆炸危险场所工程设备监理中心

编号：CNEx21.1934X

CNEX
国家防爆

防爆合格证 （附页）

GG: **布局 (与防爆无关)**
CN 键盘布局 CN (中国)
US 键盘布局 US(美国)
DE 键盘布局 德国
FR 键盘布局 法国
DK 键盘布局 丹麦
SL 键盘布局 斯洛文尼亚
ES 键盘布局 西班牙
SE 键盘布局 瑞典
JP 键盘布局 日本
00 无键盘布局
HSG: **外壳**
HSG 外壳
H: **密封**
1 密封 1
2 密封 2
II: **外壳材料**
V2 外壳材料 V2A
V4 外壳材料 V4A
J: **涂层**
N 无涂层
P 涂层
M 金属涂层
KKK: 安装选项
M## 安装选项
B## 后盖类型
L: **设计选项 (与防爆无关)**
S 标准
G GMP 选项
MM: **附件**
00 无附件
U3 UB03
* 由字符和数字代替以区分型号，不影响防爆性能。
# 由字符和数字代替以区分型号，不影响防爆性能。

参数：
电气参数：
型号 PD2-Z1-***-**-**-*-**-HSG * ** * *** * ** *(指点设备)：
通过最大长度为 5 m 的永久连接电缆供电。

中心主任

颁发日期 2021 年 6 月 17 日

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爆炸危险场所工程设备监理中心

CNEX 国家防爆

编号：CNEx21.1934X

防爆合格证 （附页）

对于 8 线电缆：+5V（5 代表红色），USB-m（7 代表灰色），USB_p（8 代表粉色）和 GND（6 代表蓝色）。对于 4 线电缆：+5V（1 代表白色），USB-m（2 代表绿色），USB_p（3 代表黄色）和 GND（4 代表棕色)。

最大输入电压 U_i	5.9 V DC
最大输入电流 I_i	
对于 II 类	319 mA
对于粉尘类、iaD	319 mA
对于粉尘类、ibD	250 mA
最大输入功率 P_i	650 mW
有效内部电容 C_i	21 µF
有效内部电感 L_i	1.68 µH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200 pF/m
电缆电感 L_c	1 µH/m

型号 KB2-Z1-***-00-**-*-**-HSG * ** * *** * ** *(不带指点设备的键盘)：
通过最大长度为 5 米的永久连接电缆供电。
电线：+5V (1 代表白色), USB-m (2 代表绿色), USB_p (3 代表黄色)和 GND (4 代表棕色)。

最大输入电压 U_i	5.9 V DC
最大输入电流 I_i	
对于 II 类	319 mA
对于粉尘类、iaD	319 mA
对于粉尘类、ibD	250 mA
最大输入功率 P_i	650 mW
有效内部电容 C_i	21 µF
有效内部电感 L_i	1.68 µH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200 pF/m
电缆电感 L_c	1 µH/m

中心主任

颁发日期 2021 年 6 月 17 日

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Ex CQST 国家防爆电气产品质量监督检验中心 南阳防爆电气研究所

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中国电工技术学会防爆电气技术专业委员会

爆炸危险场所工程设备监理中心

CNEX 国家防爆

编号：CNEx21.1934X

防爆合格证 （附页）

型号 KB2-Z1-***-TB-**-*-**-HSG * ** * *** * ** * ，
型号 KB2-Z1-***-TP-**-*-**-HSG * ** * *** * ** * ，
型号 KB2-Z1-***-JS-**-*-**-HSG * ** * *** * ** * (带指点设备的键盘)：
通过 8 线永久连接电缆提供 2 个独立的本安电路，最大长度为 5 m。
键盘电路：
电线：+5V (1 代表白色), USB-m (2 代表绿色), USB_p (3 代表黄色)和 GND (4 代表棕色)。

最大输入电压 U_i	5.9 V DC
最大输入电流 I_i	
对于 II 类	319 mA
对于粉尘类、iaD	319 mA
对于粉尘类、ibD	250 mA
最大输入功率 P_i	650 mW
有效内部电容 C_i	21 µF
有效内部电感 L_i	1.68 µH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200 pF/m
电缆电感 L_c	1 µH/m

指点设备电路：
电线：+5V (5 代表红色), USB-m (7 代表灰色), USB_p (8 代表粉色)和 GND (6 代表蓝色)。

最大输入电压 U_i	5.9 V DC
最大输入电流 I_i	
对于 II 类	319 mA
对于粉尘类、iaD	319 mA
对于粉尘类、ibD	250 mA
最大输入功率 P_i	650 mW
有效内部电容 C_i	21 µF
有效内部电感 L_i	1.68 µH
对于永久连接的电缆，还必须遵守以下值：	
电缆电容 C_c	200 pF/m
电缆电感 L_c	1 µH/m

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CNEX 国家防爆

编号：CNEx21.1934X

防爆合格证 （附页）

共 6 页 第 5 页

型号 ***-Z1-***-**-**-*-**-HSG * ** * *** * U3 *(附件 UB03)：

接线端子 X1，插脚 1	
非本质安全供电电路（电源）	
额定电压	5~30V DC
额定电流	≤ 1 A
额定功率	≤ 30 W
最大输入电压 U_m	250V AC
接线端子 X1，插脚 2 和 3	
非本质安全接口数据	
额定电压	5V AC/DC
最大输入电压 U_m	250V AC
接线端子 X1，插脚 2 和 3（仅适用于“UB03-*-RFID-*-RS422*”）	
非本质安全接口数据	
最大电压	30V AC/DC
最大电流	≤ 1 A
接线端子 X1，插脚 2 和 3（仅适用于“UB03-*-AMP Audio*”和“UB03-*-DSP-10*”）	
非本质安全接口数据	
最大输出电压	30V AC/DC

接线端子 X2	
非本质安全接口数据	
额定电压	5V AC/DC
最大输入电压 U_m	250V AC

环境温度：-40℃ ~+70℃

中心主任

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编号：CNEx21.1934X

CNEX
国家防爆

防爆合格证 （附页）

共 6 页 第 6 页

防爆标志：

型号 KB2-Z1-...-HSG...00... 和 PD2-Z1-...-HSG…00…：

当连接到 ia 电路时：Ex ia IIC T4 Gb/Ex iaD 21 T200 135℃

当连接到 ib 电路时：Ex ib IIC T4 Gb/Ex ibD 21 T200 135℃

当连接到 ic 电路时：Ex ic IIC T4 Gc

型号 KB2-Z1-…-HSG…U3…和 PD2-Z1-…-HSG…U3…：

当连接到 ia 电路时：Ex e ia q IIC T4 Gb/Ex tD A21 IP 66 T135℃+Ex iaD 21 T135℃

当连接到 ib 电路时：Ex e ib q IIC T4 Gb/Ex tD A21 IP 66 T135℃+Ex ibD 21 T135℃

当连接到 ic 电路时：Ex e ic q IIC T4 Gc

安全使用条件：

- 型号 KB2-Z1-… 和 PD2-Z1-…：

●当在粉尘爆炸区域供电>250 mA 时：设备必须由 ia 电路供电（线性特性）。

- 型号 KB2-Z1-***-TB-**-*-**-HSG * ** * *** * ** *、KB2-Z1-***-TP-**-*-**-HSG * ** * *** * ** * 和 KB2-Z1-***-JS-**-*-**-HSG * ** * *** * ** *：

●连接电缆包含 2 个独立的本安电路。

●该设备的安装方式必须排除电缆上的机械影响（拉力）。

●电缆必须固定并有防止损坏措施。

- 该设备（包括连接电缆）不能安装在强静电充电过程的区域。
- 外壳必须接地，接地电阻小于 1MΩ。如果适用，可使用安装部件或已安装部件的接地。
- 对于型号 KB2-*-HSG*U3*或 PD2-*-HSG*U3*，UB03 连接必须使用绝缘层至少为 0.5 mm 的连接电缆（导线/外护套）。连接电缆必须安装在外壳中，确保与键盘/指点设备的裸露导电部件之间至少有 50 mm 的距离。

中心主任

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6 Korean certificates

6.1 KCC

86F1-AB74-E036-35BA 24-056576-01

방송통신기자재등의 적합등록 필증

Registration of Broadcasting and Communication Equipments

상호 또는 성명 Trade Name or Registrant	**알스탈주식회사**
기자재명칭(제품명칭) Equipment Name	**Keyboard with trackball**
기기부호/추가 기기부호 Equipment code /Additional Equipment code	**IND**
기본모델명 Basic Model Number	**KB2-Z1-USB-TB-AP-P-DE**
파생모델명 Series Model Number	**별지 참조**
등록번호 Registration No.	**R-R-RSE-KB2-Z1-USB-TB**
제조자/제조국가 Manufacturer/Country of Origin	**R.stahl HMI Systems GmbH/독일**
등록연월일 Date of Registration	**2022-03-23**
기타 Others	

위 기자재는「전파법」제58조의2 제3항에 따라 등록되었음을 증명합니다.

It is verified that foregoing equipment has been registered under the Clause 3, Article 58-2 of Radio Waves Act.

2024년(Year) 12월(Month) 11일(Day)

국립전파연구원장 국립전파연구원장인

Director General of National Radio Research Agency

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위반시 과태료 처분 및 등록이 취소될 수 있습니다.

86F1-AB74-E036-35BA

별 지

24-056576-01

상호 또는 성명	알스탈주식회사
기자재명칭	Keyboard with trackball
인증번호	R-R-RSE-KB2-Z1-USB-TB
기본모델명	KB2-Z1-USB-TB-AP-P-DE
파생모델명	

KB2-Z1-USB-JS-AP-P-US, KB2-Z1-USB-TB-AP-P-DE-HSG1V2NC00S0000000,
KB2-Z1-USB-TB-AP-P-DE-HSG1V2NC00S00R0000, KB2-Z1-USB-TB-AP-P-DE-HSG1V2NC00SU300000,
KB2-Z1-USB-TB-AP-P-DE-HSG1V2NC00SU3R0000, KB2-Z1-USB-TB-AP-P-DE-HSG1V2NM00S0000000,
KB2-Z1-USB-TB-AP-P-DE-HSG1V2NM00S00R0000, KB2-Z1-USB-TB-AP-P-DE-HSG1V2NM00SU300000,
KB2-Z1-USB-TB-AP-P-DE-HSG1V2NM00SU3R0000, KB2-Z1-USB-TB-AP-P-DE-HSG1V2NM01S0000000,
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KB2-Z1-USB-TB-AP-P-DE-HSG2V2NM04SU3R0000, KB2-Z1-USB-TB-AP-P-DE-HSG2V4NC00S0000000,
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KB2-Z1-USB-TB-AP-P-DE-HSG2V4NM02S00R0000, KB2-Z1-USB-TB-AP-P-DE-HSG2V4NM02SU300000,
KB2-Z1-USB-TB-AP-P-DE-HSG2V4NM02SU3R0000, KB2-Z1-USB-TB-AP-P-DE-HSG2V4NM03S0000000,
KB2-Z1-USB-TB-AP-P-DE-HSG2V4NM03S00R0000, KB2-Z1-USB-TB-AP-P-DE-HSG2V4NM03SU300000,
KB2-Z1-USB-TB-AP-P-DE-HSG2V4NM03SU3R0000, KB2-Z1-USB-TB-AP-P-DE-HSG2V4NM04S0000000,

24-056576-01

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KB2-Z1-USB-TB-AP-P-US-HSG1V4NM01SU300000, KB2-Z1-USB-TB-AP-P-US-HSG1V4NM01SU3R0000,
KB2-Z1-USB-TB-AP-P-US-HSG1V4NM02S0000000, KB2-Z1-USB-TB-AP-P-US-HSG1V4NM02S00R0000,
KB2-Z1-USB-TB-AP-P-US-HSG1V4NM02SU300000, KB2-Z1-USB-TB-AP-P-US-HSG1V4NM02SU3R0000,
KB2-Z1-USB-TB-AP-P-US-HSG1V4NM03S0000000, KB2-Z1-USB-TB-AP-P-US-HSG1V4NM03S00R0000,
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KB2-Z1-USB-TB-AP-P-US-HSG2V2NM02SU300000, KB2-Z1-USB-TB-AP-P-US-HSG2V2NM02SU3R0000,
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KB2-Z1-USB-TB-AP-P-US-HSG2V2NM04SU300000, KB2-Z1-USB-TB-AP-P-US-HSG2V2NM04SU3R0000,
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KB2-Z1-USB-TB-AP-P-US-HSG2V4NM02SU300000, KB2-Z1-USB-TB-AP-P-US-HSG2V4NM02SU3R0000,
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KB2-Z1-USB-TB-AP-P-US-HSG2V4NM04S0000000, KB2-Z1-USB-TB-AP-P-US-HSG2V4NM04S00R0000,
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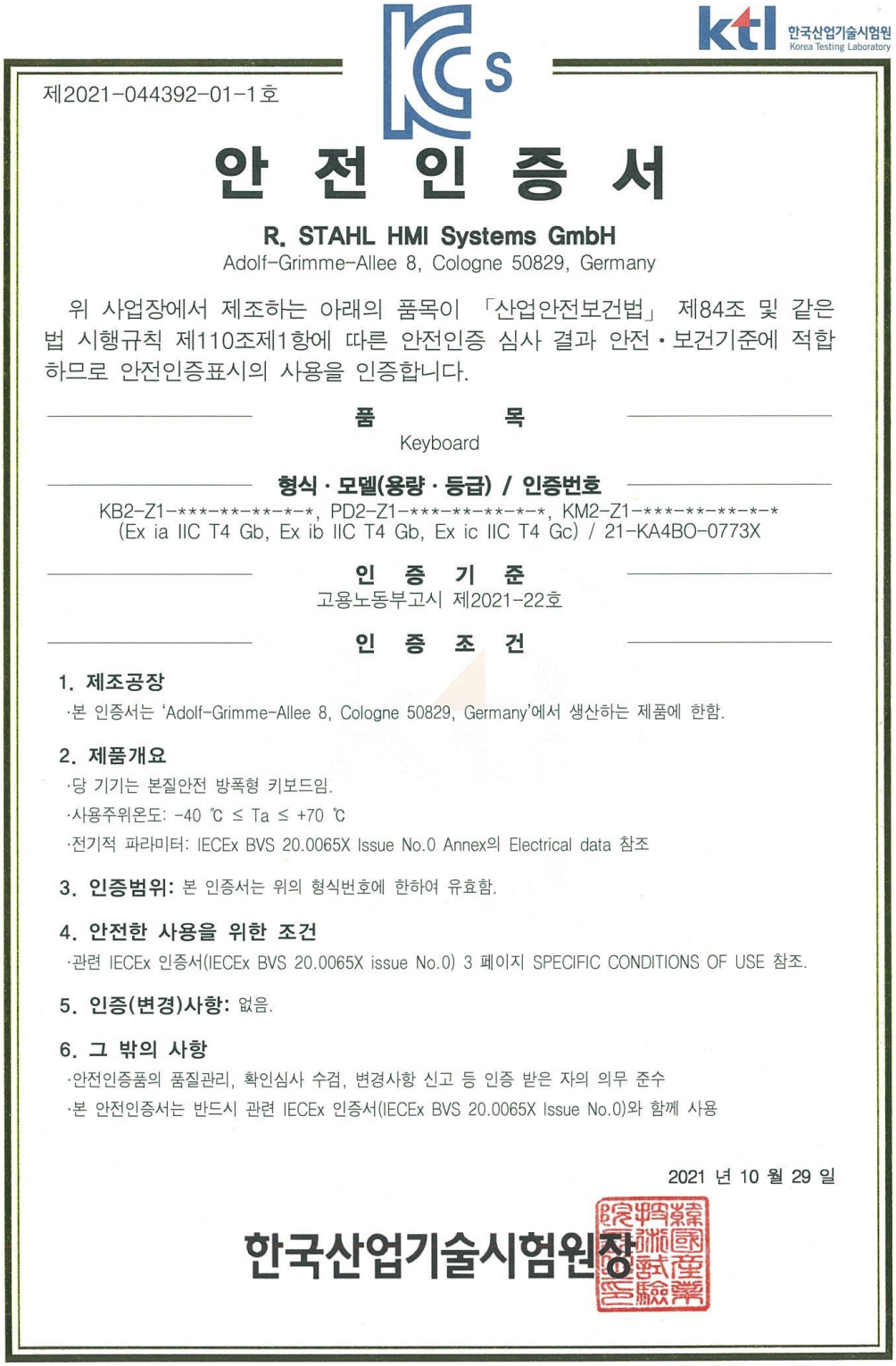
6.2 KCS

6.2.1 KB2 / PD2 – Z1 (Zone 1 devices)



제2021-044392-01-1호

안 전 인 증 서

R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8, Cologne 50829, Germany

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목
Keyboard

형식·모델(용량·등급) / 인증번호
KB2-Z1-***-**-**-*-*, PD2-Z1-***-**-**-*-*, KM2-Z1-***-**-**-*-*
(Ex ia IIC T4 Gb, Ex ib IIC T4 Gb, Ex ic IIC T4 Gc) / 21-KA4BO-0773X

인 증 기 준
고용노동부고시 제2021-22호

인 증 조 건

1. **제조공장**
·본 인증서는 'Adolf-Grimme-Allee 8, Cologne 50829, Germany'에서 생산하는 제품에 한함.

2. **제품개요**
·당 기기는 본질안전 방폭형 키보드임.
·사용주위온도: -40 ℃ ≤ Ta ≤ +70 ℃
·전기적 파라미터: IECEx BVS 20.0065X Issue No.0 Annex의 Electrical data 참조

3. **인증범위:** 본 인증서는 위의 형식번호에 한하여 유효함.

4. **안전한 사용을 위한 조건**
·관련 IECEx 인증서(IECEx BVS 20.0065X issue No.0) 3 페이지 SPECIFIC CONDITIONS OF USE 참조.

5. **인증(변경)사항:** 없음.

6. **그 밖의 사항**
·안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
·본 안전인증서는 반드시 관련 IECEx 인증서(IECEx BVS 20.0065X Issue No.0)와 함께 사용

2021 년 10 월 29 일

한국산업기술시험원장

산업안전보건법 시행규칙 [별지 제46호서식]

(08389) 서울시 구로구 디지털로 26길 87(구로동) http://www.ktl.re.kr
(52852) 경상남도 진주시 충의로 10(충무공동)

6.2.2 KB2 / PD2 – Z1 (Zone 21 devices)

ktl 한국산업기술시험원 Korea Testing Laboratory

제2021-044393-01-1호

안 전 인 증 서

R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8, Cologne 50829, Germany

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목
Keyboard

형식·모델(용량·등급) / 인증번호
KB2-Z1-***-**-**-*-*, PD2-Z1-***-**-**-*-*, KM2-Z1-***-**-**-*-*
(Ex ia IIIC T_{200} 135 °C Db, Ex ib IIIC T_{200} 135 °C Db, Ex ic IIIC T_{200} 135 °C Dc) / 21-KA4BO-0774X

인 증 기 준
고용노동부고시 제2021-22호

인 증 조 건

1. 제조공장
·본 인증서는 'Adolf-Grimme-Allee 8, Cologne 50829, Germany'에서 생산하는 제품에 한함.

2. 제품개요
·당 기기는 방폭형 키보드임.
·사용주위온도: -40 ℃ ≤ Ta ≤ +70 ℃
·전기적 파라미터: IECEx BVS 20.0065X Issue No.0 Annex의 Electrical data 참조

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건: 없음.

5. 인증(변경)사항
·관련 IECEx 인증서(IECEx BVS 20.0065X issue No.0) 3 페이지 SPECIFIC CONDITIONS OF USE 참조.

6. 그 밖의 사항
·안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
·본 안전인증서는 반드시 관련 IECEx 인증서(IECEx BVS 20.0065X Issue No.0)와 함께 사용

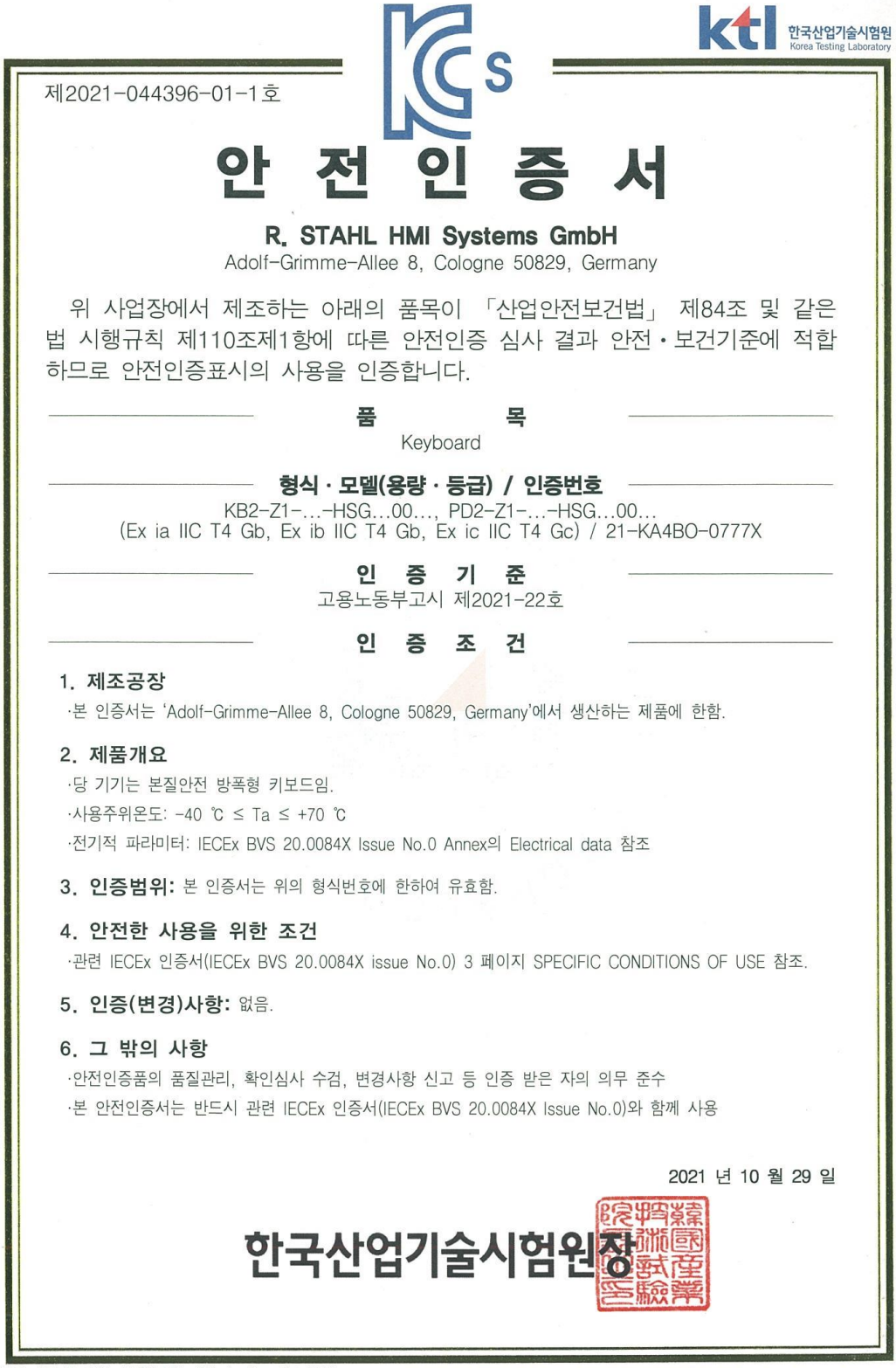
2021 년 10 월 29 일

한국산업기술시험원장

산업안전보건법 시행규칙 [별지 제46호서식]

(08389) 서울시 구로구 디지털로 26길 87(구로동) http://www.ktl.re.kr
(52852) 경상남도 진주시 충의로 10(충무공동)

6.2.3 KB2 / PD2 – Z1-*-HSG*00* (Zone 1 devices inside enclosure)



제2021-044396-01-1호

안 전 인 증 서

R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8, Cologne 50829, Germany

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목
Keyboard

형식·모델(용량·등급) / 인증번호
KB2-Z1-...-HSG...00..., PD2-Z1-...-HSG...00...
(Ex ia IIC T4 Gb, Ex ib IIC T4 Gb, Ex ic IIC T4 Gc) / 21-KA4BO-0777X

인 증 기 준
고용노동부고시 제2021-22호

인 증 조 건

1. 제조공장
·본 인증서는 'Adolf-Grimme-Allee 8, Cologne 50829, Germany'에서 생산하는 제품에 한함.

2. 제품개요
·당 기기는 본질안전 방폭형 키보드임.
·사용주위온도: -40 ℃ ≤ Ta ≤ +70 ℃
·전기적 파라미터: IECEx BVS 20.0084X Issue No.0 Annex의 Electrical data 참조

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건
·관련 IECEx 인증서(IECEx BVS 20.0084X issue No.0) 3 페이지 SPECIFIC CONDITIONS OF USE 참조.

5. 인증(변경)사항: 없음.

6. 그 밖의 사항
·안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
·본 안전인증서는 반드시 관련 IECEx 인증서(IECEx BVS 20.0084X Issue No.0)와 함께 사용

2021 년 10 월 29 일

한국산업기술시험원장

산업안전보건법 시행규칙 [별지 제46호서식]

(08389) 서울시 구로구 디지털로 26길 87(구로동) http://www.ktl.re.kr
(52852) 경상남도 진주시 충의로 10(충무공동)

6.2.4 KB2 / PD2 – Z1-*-HSG*00* (Zone 21 devices inside enclosure)

ktl 한국산업기술시험원 Korea Testing Laboratory

제2021-044397-01-1호

안 전 인 증 서

R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8, Cologne 50829, Germany

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목
Keyboard

형식·모델(용량·등급) / 인증번호
KB2-Z1-...-HSG...00... , PD2-Z1-...-HSG...00...
(Ex ia IIIC T_{200} 135 °C Db, Ex ib IIIC T_{200} 135 °C Db, Ex ic IIIC T_{200} 135 °C Dc) / 21-KA4BO-0778X

인 증 기 준
고용노동부고시 제2021-22호

인 증 조 건

1. 제조공장
·본 인증서는 'Adolf-Grimme-Allee 8, Cologne 50829, Germany'에서 생산하는 제품에 한함.

2. 제품개요
·당 기기는 분진 방폭형 키보드임.
·사용주위온도: -40 ℃ ≤ Ta ≤ +70 ℃
·전기적 파라미터: IECEx BVS 20.0084X Issue No.0 Annex의 Electrical data 참조

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건
·관련 IECEx 인증서(IECEx BVS 20.0084X issue No.0) 3 페이지 SPECIFIC CONDITIONS OF USE 참조.

5. 인증(변경)사항: 없음.

6. 그 밖의 사항
·안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
·본 안전인증서는 반드시 관련 IECEx 인증서(IECEx BVS 20.0084X Issue No.0)와 함께 사용

2021 년 10 월 29 일

한국산업기술시험원장

산업안전보건법 시행규칙 [별지 제46호서식]

(08389) 서울시 구로구 디지털로 26길 87(구로동) http://www.ktl.re.kr
(52852) 경상남도 진주시 충의로 10(충무공동)

6.2.5 KB2 / PD2 – Z1-*-HSG*U3* (Zone 1 devices inside enclosure, UB03)

ktl 한국산업기술시험원 Korea Testing Laboratory

제2021-044398-01-1호

안 전 인 증 서

R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8, Cologne 50829, Germany

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목
Keyboard

형식·모델(용량·등급) / 인증번호
KB2-Z1-...-HSG...U3... , PD2-Z1-...-HSG...U3...
(Ex eb ia q IIC T4 Gb, Ex eb ib q IIC T4 Gb, Ex eb ic q IIC T4 Gc) / 21-KA4BO-0779X

인 증 기 준
고용노동부고시 제2021-22호

인 증 조 건

1. **제조공장**
   ·본 인증서는 'Adolf-Grimme-Allee 8, Cologne 50829, Germany'에서 생산하는 제품에 한함.
2. **제품개요**
   ·당 기기는 본질안전 방폭지역에서 사용 가능한 Keyboard 임.
   ·사용주위온도: -40 ℃ ≤ Ta ≤ +70 ℃
   ·전기적 파라미터: IECEx BVS 20.0084X Issue No.0 Annex의 Electrical data 참조
3. **인증범위:** 본 인증서는 위의 형식번호에 한하여 유효함.
4. **안전한 사용을 위한 조건**
   ·관련 IECEx 인증서(IECEx BVS 20.0084X issue No.0) 3 페이지 SPECIFIC CONDITIONS OF USE 참조.
5. **인증(변경)사항:** 없음.
6. **그 밖의 사항**
   ·안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
   ·본 안전인증서는 반드시 관련 IECEx 인증서(IECEx BVS 20.0084X Issue No.0)와 함께 사용

2021 년 10 월 29 일

한국산업기술시험원장

산업안전보건법 시행규칙 [별지 제46호서식]

(08389) 서울시 구로구 디지털로 26길 87(구로동) http://www.ktl.re.kr
(52852) 경상남도 진주시 충의로 10(충무공동)

6.2.6 KB2 / PD2 – Z1-*-HSG*U3* (Zone 21 devices inside enclosure, UB03)

ktl 한국산업기술시험원 Korea Testing Laboratory

제2021-044399-01-1호

안 전 인 증 서

R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8, Cologne 50829, Germany

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목
Keyboard

형식·모델(용량·등급) / 인증번호
KB2-Z1-...-HSG...U3... , PD2-Z1-...-HSG...U3...
(Ex ia tb IIIC T135°C Db, Ex ib tb IIIC T135°C Db, Ex ic tb IIIC T135°C Dc) / 21-KA4BO-0780X

인 증 기 준
고용노동부고시 제2021-22호

인 증 조 건

1. 제조공장
·본 인증서는 'Adolf-Grimme-Allee 8, Cologne 50829, Germany'에서 생산하는 제품에 한함.

2. 제품개요
·당 기기는 분진 방폭형 키보드임.
·사용주위온도: -40 ℃ ≤ Ta ≤ +70 ℃
·전기적 파라미터: IECEx BVS 20.0084X Issue No.0 Annex의 Electrical data 참조

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건
·관련 IECEx 인증서(IECEx BVS 20.0084X issue No.0) 3 페이지 SPECIFIC CONDITIONS OF USE 참조.

5. 인증(변경)사항: 없음.

6. 그 밖의 사항
·안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
·본 안전인증서는 반드시 관련 IECEx 인증서(IECEx BVS 20.0084X Issue No.0)와 함께 사용

2021 년 10 월 29 일

한국산업기술시험원장

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6.3 Customer confirmation letter

Customer confirmation letter
납품처 확인서

1. Delivery Overview/ 납품 개요

   - Target company name / 대상 회사명: (exporter/(수출자)
   - Usage / 용도: (product name / 제품명)
   - Model and quantity / 모델 및 수량:

     (product number / type number) - (quantity) / (제품 품번 / 타입번호) - (수량)

2. Overview of domestic imports of products / 제품의 국내 수입 개요

   The above (product name, model, quantity) are imported from (company name) and then delivered to the supplier (company name) (if there is an intermediary seller), the products are all overseas (country name) will be re-exported.
   상기의 (제품명, 모델, 수량)은 제조사(회사명), (중간판매상이 있을 경우 기입,) 납품처 (회사명) 로 납품하는 것으로서, 해당 제품은 모두 해외(나라이름)로 재 수출되는 것입니다.

3. According to the contract between (importer), (if there is an intermediary seller), and the supplier (company name), the product has been imported, and according to the contract of the (supplier), all are re-exported abroad. I will confirm.

   (수입자), (중간판매상 있을경우 기입), 납품처(회사명) 간 계약에 따라, 해당 제품 수입진행 하였으며, (납품처)의 계약서에 따라, 모두 해외로 재 수출되는 것임을 확인 드립니다.

   Year Month Day / 년 월 일
   Manager / 담당자 :
   contact / 연락처 :
   (Company Name) / (회사명)

4. Attachments:

- Customer PO / 고객 PO
- Owner PO of customer (in case of re-exporter) / 고객의 소유자 PO(재수출자의 경우)
- Product photo / 제품 사진
- Catalogue / 카탈로그
- Invoice / Packing list / B/L / 송장 / 포장 목록 / B/L
- Business registration / 사업자 등록

7 Release Notes

This chapter lists the changes made in the most recent versions of these certificates document.

Version 01.01.00

- CE creation based on CE version 01.00.04
- Keyboard with "Update KB2 controller and trackball", no externally visible changes
- Removal of older release notes
- Addition of HW-Rev. on title page
- Deleting all approvals, except ATEX and IECEx
- Renew ATEX and IECEx certificates
- Formal changes

Version 01.01.01

- Addition of BIS / PESO certificates
- Formal changes

Version 01.01.02

- Addition of Chinese certificates CCC / CNEx
- Addition of Korean certificates KCC / KCS
- Formal changes

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