



Certificates



Device version KB2, incl. HSG

KB2 Keyboards

PD2 Pointing device

KB2-HSG / PD2-HSG Assemblies



THE STRONGEST LINK.

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Disclaimer

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1 Preface

 **NOTICE**

This document contains all valid certificates for the KB2 product line. 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 CD / DVD / 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 **Equipment intended for use in potentially explosive atmospheres**
Directive 2014/34/EU

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

4 Product: **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.

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 Special Conditions for Use specified in the appendix to this certificate.

11 This EU-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 2G Ex ia IIC T4 Gb	(When connected to an ia-circuit)
	II 2D Ex ia IIIC T₂₀₀ 135°C Db	
	II 2G Ex ib IIC T4 Gb	(When connected to an ib-circuit)
	II 2D Ex ib IIIC T₂₀₀ 135°C Db	
	II 3G Ex ic IIC T4 Gc	(When connected to an ic-circuit)
	II 3D Ex ic IIIC T₂₀₀ 135°C Dc	

DEKRA Testing and Certification GmbH
 Bochum, 2010-09-18

Signed: Jörg-Timm Kilisch

Managing Director



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13 **Appendix**14 **EU-Type Examination Certificate****BVS 20 ATEX E 078 X**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**

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.

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 to 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 Typ 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 to 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).

Listing of all components used referring to older standards

No components

15.3 Parameters

15.3.1 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	μ F
Effective internal inductance	L_i		1.68	μ H

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	μ H/m



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15.3.1.2 **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	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

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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	μ H/m

15.3.1.4 Type **KM2-Z1-***-**-***-***:
(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, 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	μ F
Effective internal inductance	L_i		1.68	μ H

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		μ F
Maximum external inductance	L_o	0.5		μ H

15.3.2 Thermal parameters

Ambient temperature resp. temperature at the place of installation	T_a	-40 °C.... 70 °C
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Further details are part of the manual.

16 Report Number

BVS PP 20.2125 EU, as of 2020-09-18



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17 Special Conditions for 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.

18 Essential Health and Safety Requirements

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 Drawings and Documents

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, 2020-09-18
BVS-Su A20191076



Managing Director



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2.2 KB2 / PD2 – Z2



Translation

1 **Type Examination Certificate**2 Equipment intended for use in potentially explosive atmospheres
Directive 2014/34/EU3 Type Examination Certificate Number: **BVS 20 ATEX E 079 X**4 Product: **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.

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 Special Conditions for Use specified in the appendix to 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 IIC T₂₀₀ 135 °C DcDEKRA Testing and Certification GmbH
Bochum, 2020-09-18

Signed: Jörg-Timm Kilisch

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13 **Appendix**14 **Type Examination Certificate****BVS 20 ATEX E 079 X**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**

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).

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.



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- 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.

Listing of all components used referring to older standards

No components

15.3 Parameters

15.3.1 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	μ F
Effective internal inductance	L_i		1.68	μ H

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	μ H/m

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

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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

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



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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
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 2020-09-18

17 Special Conditions for 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.



Page 5 of 6 of BVS 20 ATEX E 079 X – Jobnumber 342029300
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18 Essential Health and Safety Requirements

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 Drawings and Documents

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, 2020-09-18
BVS-Su/Hk A20200911



Managing Director



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



Translation

1 **EU-Type Examination Certificate**2 **Equipment intended for use in potentially explosive atmospheres
Directive 2014/34/EU**3 EU-Type Examination Certificate Number: **BVS 20 ATEX E 106 X**4 Product: **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 **.**** EU.

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

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 Special Conditions for Use specified in the appendix to this certificate.

11 This EU-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-Z1-...-HSG...00	when connected to an ia-circuit		II 2G Ex ia IIC T4 Gb
Type PD2-Z1-...-HSG...00...	when connected to an ib-circuit		II 2D Ex ia IIC T₂₀₀ 135°C Db
Type KB2-Z1-...-HSG...U3...	when connected to an ia-circuit		II 2G Ex ib IIC T4 Gb
Type PD2-Z1-...-HSG...U3...	when connected to an ib-circuit		II 2D Ex ib IIC T₂₀₀ 135°C Db
			II 2G Ex eb ia q IIC T4 Gb
			II 2D Ex ia tb IIC 135°C Db
			II 2G Ex eb ib q IIC T4 Gb
			II 2D Ex ib tb IIC 135°C Db

DEKRA Testing and Certification GmbH
Bochum, 2020-12-07

Signed: Jörg-Timm Kilisch

Managing Director

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- 13 Appendix
- 14 EU-Type Examination Certificate
- 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: Typ
 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 to explosion protection.



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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 2020-12-07

17 **Special Conditions for 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**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

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, 2020-12-07
BVS-Hk/Mu A 20191078



Managing Director

84460



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2.4 KB2 / PD2 – Z2-*-HSG*00* / *U3*



Translation

1 **Type Examination Certificate**2 Equipment intended for use in potentially explosive atmospheres
Directive 2014/34/EU3 EU-Type Examination Certificate Number: **BVS 20 ATEX E 107 X**4 Product: **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.

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 Special Conditions for Use specified in the appendix to 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		II 3G Ex ic IIC T4 Gc
Type PD2-Z2-...-HSG...00...		II 3D Ex ic IIIC T₂₀₀ 135°C Dc
Type KB2-Z2-...-HSG...U3...		II 3G Ex ec ic nC IIC T4 Gc
Type PD2-Z2-...-HSG...U3...		II 3D Ex ic tc IIIC 135°C Dc

DEKRA Testing and Certification GmbH
Bochum, 2020-12-07

Signed: Jörg-Timm Kilisch

Managing Director

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- 13 Appendix
- 14 Type Examination Certificate
BVS 20 ATEX E 107 X
- 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: Typ
 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

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, IECEx BVS 20.0065X) 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 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-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	$\mu\text{H}/\text{m}$



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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	μ F
Effective internal inductance	L_i		1.68	μ H

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	μ H/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	μ F
Effective internal inductance	L_i		1.68	μ H

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	μ H/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	μ F
Effective internal inductance	L_i		1.68	μ H

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	μ H/m

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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

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 Drawings and Documents

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, 2020-12-07
BVS-Hk/Mu A 20201199



Managing Director

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3 IECEx certificate

3.1 KB2 / PD2

		<h2 style="margin: 0;">IECEx Certificate of Conformity</h2>					
INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres <small>for rules and details of the IECEx Scheme visit www.iecex.com</small>							
Certificate No.:	IECEx BVS 20.0065X	Page 1 of 4	Certificate history:				
Status:	Current	Issue No: 0					
Date of Issue:	2020-10-19						
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:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 50%; vertical-align: top;"> Type KB2-Z1-... Type PD2-Z1-... Type KM2-Z1-... </td> <td style="width: 50%; vertical-align: top;"> When connected to an ia-circuit: Ex ia IIC T4 Gb Ex ia IIIC T₂₀₀ 135°C Db When connected to an ib-circuit: Ex ib IIC T4 Gb Ex ib IIIC T₂₀₀ 135°C Db When connected to an ic-circuit: Ex ic IIC T4 Gc Ex ic IIIC T₂₀₀ 135°C Dc </td> </tr> <tr> <td style="vertical-align: top;"> Type KB2-Z2-... Type PD2-Z2-... Type KM2-Z2-... </td> <td style="vertical-align: top;"> Ex ic IIC T4 Gc Ex ic IIIC T₂₀₀ 135°C Dc </td> </tr> </tbody> </table>			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
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 Lead Auditor and officially recognised expert  <hr style="border: 0; border-top: 1px solid black;"/> 2020-10-19						
Position:							
Signature: (for printed version)							
Date:							
1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.							
Certificate issued by: DEKRA Testing and Certification GmbH Certification Body Dinnendahlstrasse 9 44809 Bochum Germany		 DEKRA On the safe side.					
							

	IECEX Certificate of Conformity	
Certificate No.:	IECEX BVS 20.0065X	Page 2 of 4
Date of issue:	2020-10-19	Issue No: 0
Manufacturer:	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 6 50829 Köln Germany	
Additional manufacturing locations:		
<p>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</p>		
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/ExTR20.0062/00	
Quality Assessment Report:		
	DE/BVS/QAR06.0007/11	



IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0065X**

Date of issue: 2020-10-19

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Issue No: 0

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**

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Date of issue: 2020-10-19

Issue No: 0

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 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 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 fulfill 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 fulfill 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

Annex:

[BVS_20_0065_STAHL_HMI_Annex.pdf](#)



IECEx Certificate of Conformity



Certificate No.: IECEx BVS 20.0065X
Annex
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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
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Effective internal capacitance	C_i		21	μ F
--------------------------------	-------	--	----	---------

Effective internal inductance	L_i		1.68	μ H
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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	μ H/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	μ F
--------------------------------	-------	--	----	---------

Effective internal inductance	L_i		1.68	μ H
-------------------------------	-------	--	------	---------

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	μ H/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



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Certificate No.: IECEX BVS 20.0065X
Annex
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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	μ F
Effective internal inductance	L_i		1.68	μ H

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	μ H/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	μ F
Effective internal inductance	L_i		1.68	μ H

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	μ H/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	μ F
Effective internal inductance	L_i		1.68	μ H

Terminal 5 is intended for connection of a cable shield.



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Certificate No.: IECEx BVS 20.0065X

Annex

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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	μ F
Maximum external inductance	L_o	0.5	μ H

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.

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

		<h2 style="margin: 0;">IECEX Certificate of Conformity</h2>	
<p>INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres <small>for rules and details of the IECEX Scheme visit www.iecex.com</small></p>			
Certificate No.:	IECEX BVS 20.0084X	Page 1 of 3	Certificate history:
Status:	Current	Issue No: 0	
Date of Issue:	2020-12-11		
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:		Jörg Koch Head of Certification Body	
Position:		 _____	
Signature: (for printed version)		_____	
Date:		_____	
1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.			
Certificate issued by:			
DEKRA Testing and Certification GmbH Certification Body Dinnendahlstrasse 9 44809 Bochum Germany		On the safe side.	



IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 20.0084X**

Page 2 of 3

Date of issue: 2020-12-11

Issue No: 0

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

Additional
manufacturing
locations:

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"
IEC 60079-15:2010 Edition:4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-31:2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-5:2015 Edition:4.0	Explosive atmospheres -Part 5: Equipment protection by powder filling "q"
IEC 60079-7:2017 Edition:5.1	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

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/ExTR20.0083/00](#)

Quality Assessment Report:

[DE/BVS/QAR06.0007/11](#)

		<h2 style="margin: 0;">IECEX Certificate of Conformity</h2>
Certificate No.:	IECEX BVS 20.0084X	Page 3 of 3
Date of issue:	2020-12-11	Issue No: 0
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 separately certified Keyboard / Pointing Device (BVS 20 ATEX E 078 X, BVS 20 ATEX E 079 X, IECEX BVS 20.0065X) 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.		
<u>Variant KB2*-HSG*00* or PD2*-HSG*00*:</u>		
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.		
<u>Supplementary to Variant KB2*-HSG*U3* or PD2*-HSG*U3*:</u>		
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.	
Annex:		
BVS_20_0084X_R.STAHL_HMI_Annex.pdf		



IECEx Certificate of Conformity



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

Marking

The marking is visible, legible, durable and contains the following:

1. The name and address of the manufacturer
Year of construction
Serial number
Certificate number
Ambient temperature range

- 1.1 Type KB2-Z1-...-HSG...00...
Type PD2-Z1-...-HSG...00...

When connected to an ia-circuit:
Ex ia IIC T4 Gb
Ex ia IIIC T₂₀₀ 135°C Db

When connected to an ib-circuit:
Ex ib IIC T4 Gb
Ex ib IIIC T₂₀₀ 135°C Db

When connected to an ic-circuit:
Ex ic IIC T4 Gc
Ex ic IIIC T₂₀₀ 135°C Dc

- 1.2 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

- 1.3 Type KB2-Z2-...-HSG...00...
Type PD2-Z2-...-HSG...00...

Ex ic IIC T4 Gc
Ex ic IIIC T₂₀₀ 135°C Dc

- 1.4 Type KB2-Z2-...-HSG...U3...
Type PD2-Z2-...-HSG...U3...

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



IECEx Certificate of Conformity



Certificate No.: IECEx BVS 20.0084X
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	μ F
Effective internal inductance	L_i		1.68	μ H

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	μ H/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	μ F
Effective internal inductance	L_i		1.68	μ H

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	μ H/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



IECEX Certificate of Conformity



Certificate No.: IECEX BVS 20.0084X
Annex
 Page 4 of 4

1.4.2 Terminal block X2
 Non-intrinsically safe interfaces data
 Nominal voltage
 Max. input voltage

	AC/DC	5	V
U _m	AC	250	V

2 Thermal parameters


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

4 Chinese certificates

4.1 CCC

4.1.1 KB2 / PD2 – Z1

4.1.1.1 Chinese version



中国国家强制性产品认证证书

编 号: 2021312309000474

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-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
依 据 标 准	GB/T 3836.1-2021, GB/T 3836.4-2021

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 08 日


颁发日期：2023 年 04 月 28 日 有效期至：2026 年 05 月 07 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。



南阳防爆电气研究所有限公司



主任： 



中国认可
产品
PRODUCT
CNAS C208-P

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CN 0025792



中国国家强制性产品认证证书 (附页)

编 号: 2021312309000474

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产品相关信息:

1、本证书覆盖产品如下:

- 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 带定点设备的键盘
PD2 仅限定点设备
KM2 矩阵键盘接口

BB: 区域
Z1 用于 1、2、21、22 区

CCC: 接口类型 (与防爆不相关)

DD: 定点设备型号
00 无定点设备
TB 轨迹球
TP 触摸板
JS 操纵杆

EE: 前板材料

颁发日期: 2023 年 04 月 28 日

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中国国家强制性产品认证证书 (附页)

编号: 2021312309000474

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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
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-***-**-***-*** (定点设备):

通过最大长度为 5 m 的永久连接电缆供电。

颁发日期: 2023 年 04 月 28 日

主任:



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中国国家强制性产品认证证书 (附页)

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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 III 类、ia	319mA
对于 III 类、ib	250mA
最大输入功率 P_i	650mW
有效内部电容 C_i	21 μ F
有效内部电感 L_i	1.68 μ H
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	1 μ H/m

型号 **KB2-Z1-***-00-**-***** (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	5.9V DC
最大输入电流 I_i	
对于 II 类	319mA

颁发日期: 2023 年 04 月 28 日

主任:



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中国国家强制性产品认证证书 (附页)

编号: 2021312309000474

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对于 III 类、ia	319mA
对于 III 类、ib	250mA
最大输入功率 P_i	650mW
有效内部电容 C_i	21 μ F
有效内部电感 L_i	1.68 μ H
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	1 μ H/m

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

(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	5.9V DC
最大输入电流 I_i	
对于 II 类	319mA
对于 III 类、ia	319mA
对于 III 类、ib	250mA
最大输入功率 P_i	650mW
有效内部电容 C_i	21 μ F

颁发日期: 2023 年 04 月 28 日

主任:

穆大玉



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编 号: 2021312309000474

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有效内部电感 L_i	1.68 μ H
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	1 μ H/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	5.9V DC
最大输入电流 I_i	
对于 II 类	319mA
对于 III 类、ia	319mA
对于 III 类、ib	250mA
最大输入功率 P_i	650mW
有效内部电容 C_i	21 μ F
有效内部电感 L_i	1.68 μ H
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	1 μ H/m

型号 KM2-Z1-***-**-**-***(键盘线路):

供电电路:

接线端子 X1

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中国国家强制性产品认证证书 (附页)

编 号: 2021312309000474

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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 III 类、ia	319mA
对于 III 类、ib	250mA
最大输入功率 P_i	650mW
有效内部电容 C_i	20.5 μ F
有效内部电感 L_i	1.68 μ H
端子 5 用于电缆屏蔽的连接	

连接外部键盘的端子:

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	= U_i
最大输出电流 I_o	250 mA
最大输出功率 P_o	= P_i
最大外部电容 C_o	0.5 μ F
最大外部电感 L_o	0.5 μ H

环境温度: -40 $^{\circ}$ C~+70 $^{\circ}$ C

防爆标志:

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

颁发日期: 2023 年 04 月 28 日

主任:



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中国国家强制性产品认证证书 (附页)

编 号：2021312309000474

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当连接到 ia 电路时：Ex ia IIC T4 Gb, Ex ia IIIC T₂₀₀ 135°C Db

当连接到 ib 电路时：Ex ib IIC T4 Gb, Ex ib IIIC T₂₀₀ 135°C Db

当连接到 ic 电路时：Ex ic 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：

- 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 (GB/T3836.1) 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。

- 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：CQST2103C007, CQST2103C007/01

颁发日期：2023 年 04 月 28 日

主任：



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中国国家强制性产品认证证书 (附页)

编 号：2021312309000474

第 8 页 共 8 页

- 工厂检查报告：CN2023Q030119

4、证书变更信息：

- 2023 年 04 月 28 日第 1 次变更：产品认证依据标准变更。

颁发日期：2023 年 04 月 28 日

主任： 



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

4.1.2.1 Chinese version



中国国家强制性产品认证证书

编号: 2021312309000476

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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

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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: 穆大玉



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中国国家强制性产品认证证书 (附页)

编号: 2021312309000476

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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: 穆大玉



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- 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

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中国国家强制性产品认证证书 (附页)

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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

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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 μ F
有效内部电感 L_i	1.68 μ H
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 μ H/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 μ F
有效内部电感 L_i	1.68 μ H
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 μ H/m

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主任:



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中国国家强制性产品认证证书 (附页)

编 号: 2021312309000476

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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 μ F
有效内部电感 L_i	1.68 μ H
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 μ H/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:



南阳防爆电气研究所有限公司



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编 号: 2021312309000476

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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°C ~ +70°C

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 T₂₀₀ 135°C Db

当连接到 ib 电路时: Ex ib IIC T4 Gb, Ex ib IIIC T₂₀₀ 135°C 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:



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中国国家强制性产品认证证书 (附页)

编 号：2021312309000476

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- 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：



南阳防爆电气研究所有限公司



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4.2 CNEx

4.2.1 KB2 / PD2 – Z1

4.2.1.1 English version



Certificate number: CNEx21.1931X

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



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Certificate number: CNEx21.1931X

Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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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. 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.

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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Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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- 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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Certificate number: CNEx21.1931X

Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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

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2026-6-16



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Certificate number: CNEx21.1931X

Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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

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Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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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	20.5 μ F
Effective internal inductance L_i	1.68 μ H
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	0.5 μ F
Maximum external inductance L_o	0.5 μ H

Ambient temperature: -40 $^{\circ}$ C~70 $^{\circ}$ C

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 T₂₀₀ 135 $^{\circ}$ C

When connected to an ib-circuit: Ex ib IIC T4 Gb/Ex ibD 21 T₂₀₀ 135 $^{\circ}$ C

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

Director

Date: 2021-6-17

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Certificate number: CNEx21.1931X

Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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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.

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4.2.1.2 Chinese version



国家防爆

编号: CNEx21.1931X

防爆合格证

制造单位	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Köln, 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



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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强制性认证



IECEX认证

自愿性认证



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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



编号: CNEEx21.1931X

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

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防爆合格证 (附页)

共 5 页 第 2 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	21 μ F
有效内部电感 L_i	1.68 μ H
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	1 μ H/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)

共 5 页 第 3 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	21 μ F
有效内部电感 L_i	1.68 μ H
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	1 μ H/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	21 μ F
有效内部电感 L_i	1.68 μ H
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	1 μ H/m

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防爆合格证 (附页)

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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	21 μ F
有效内部电感 L_i	1.68 μ H
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	1 μ H/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	20.5 μ F
有效内部电感 L_i	1.68 μ H
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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国家防爆

编号: CNEEx21.1931X

防爆合格证 (附页)

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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	= U_i
最大输出电流 I_o	250 mA
最大输出功率 P_o	= P_i
最大外部电容 C_o	0.5 μ F
最大外部电感 L_o	0.5 μ H

环境温度: -40 $^{\circ}$ C~70 $^{\circ}$ C

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 $^{\circ}$ C

当连接到 ib 电路时: Ex ib IIC T4 Gb/Ex ibD 21 T200 135 $^{\circ}$ C

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。

中心主任

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

4.2.2.1 English version



Certificate number: CNEx21.1934X

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



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Certificate number: CNEx21.1934X

Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

Page 1 of 6

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

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2021-6-17

Valid until:

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Certificate number: CNEx21.1934X

Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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- 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:

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Valid until:

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Certificate number: CNEx21.1934X

Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

Page 4 of 6

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 μ F
Effective internal inductance L_i	1.68 μ H
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 μ H/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 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 μ F
Effective internal inductance L_i	1.68 μ H
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 μ H/m

Pointing Device-Circuit:

Director

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Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

Page 5 of 6

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
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 μ F
Effective internal inductance L_i	1.68 μ H
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 μ H/m

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

Terminal block X1, pin1	
Non-intrinsically safe supply circuit (Power)	
Nominal voltage	5~30V DC
Nominal current	\leq 1 A
Nominal power	\leq 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)	
Non-intrinsically safe interfaces data	
Max. voltage	30V AC/DC
Max. current	\leq 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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Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

Page 6 of 6

Terminal block X2	
Non-intrinsically safe interfaces data	
Nominal voltage	5V AC/DC
Max. input voltage Um	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 iaD 21 T₂₀₀ 135°C

When connected to an ib-circuit: Ex ib IIC T4 Gb/Ex ibD 21 T₂₀₀ 135°C

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°C+Ex iaD 21 T135°C

When connected to an ib-circuit: Ex e ib q IIC T4 Gb/

Ex tD A21 IP 66 T135°C+Ex ibD 21 T135°C

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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4.2.2.2 Chinese version



国家防爆

编号: CNEx21.1934X

防爆合格证

制造单位	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Köln, 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”保护的的设备》
- GB/T3836.7-2017《爆炸性环境 第7部分:由充砂型“q”保护的的设备》
- 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)。

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编号: CNEx21.1934X

防爆合格证 (附页)

共6页 第1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 I J K K K L M M *

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

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防爆合格证 (附页)

共 6 页 第 2 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。

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防爆合格证 (附页)

共 6 页 第 3 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 μ F
有效内部电感 L_i	1.68 μ H
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 μ H/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 μ F
有效内部电感 L_i	1.68 μ H
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 μ H/m

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防爆合格证 (附页)

共 6 页 第 4 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 μ F
有效内部电感 L_i	1.68 μ H
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 μ H/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 μ F
有效内部电感 L_i	1.68 μ H
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 μ H/m

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



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
 邮政编码: 473008
 电话: 0377-63258564
 传真: 0377-63208175
 网址: www.china-ex.com



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强制性认证

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南阳防爆电气研究所国际认证中心 (CNEX-GLOBAL B.V.)

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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

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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



南阳防爆电气研究所



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爆炸危险场所工程设备监理中心



编号: CNEEx21.1934X

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°C
 当连接到 ib 电路时: Ex ib IIC T4 Gb/Ex ibD 21 T200 135°C
 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°C+Ex iaD 21 T135°C
 当连接到 ib 电路时: Ex e ib q IIC T4 Gb/Ex tD A21 IP 66 T135°C+Ex ibD 21 T135°C
 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

颁发日期

2021年6月17日

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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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5 Indian certificates

5.1 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 जफर 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

वेबसाइट/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	
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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 Budiya)
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 जफर 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
वेबसाइट / 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.

5.2 PESO



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/104/6230 (P541910)

Dated : 11/08/2022

To,

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

Sub : Approval of Intrinsically Safe, Sand Filled, Increased Safety Type Electrical Equipments under Petroleum Rules 2002. under Petroleum Rules 2002- Regarding.
Sir(s),

Please refer to your letter No. OIN1110266 dated 28/07/2022 on the subject.

The following Ex electrical equipment(s) manufactured by you according to IEC 60079-0 : 2017, IEC 60079-11 : 2011, IEC 60079-5 : 2015, IEC 60079-7 : 2017, 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	Operator Terminal type ET-208	Ex eb ib q [ib] IIC T4 Gb	P541910/1	DEKRA Testing and Certification GmbH	IECEX BVS 15.0039X Issue No 1	03/02/2022	13100004
2	Keyboard with pointing device Type KB2-Z1-...	Ex ia IIC T4 Gb	P541910/2	DEKRA Testing and Certification GmbH	IECEX BVS 20.0065X Issue No 0	19/10/2020	10591300
3	Keyboard with pointing device Type KB2-Z1-...	Ex ib IIC T4 Gb	P541910/3	DEKRA Testing and Certification GmbH	IECEX BVS 20.0065X Issue No 0	19/10/2020	10591300

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 maintenance 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 characteristics.
- 6) The After sales service and maintenance of subject equipment shall be looked after by your representative R. STAHL PRIVATE LIMITED, Plot No.5, Malrosapuram Main Road

Conditions of the Approval:-

The approval for above equipment is subject to validity of IECEX Quality Assessment Report No. DE/BVS/QAR06.0007.

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 31/12/2026

Yours faithfully,

(A.B. Tamgadge)
Dy. Chief 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

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 A B TAMGADGE
Reason: Approval No. : A/P/HQ/TN/104/6230
Location:Nagpur [P541910]
Date:2022.08.11 05:58:25 +05:30

6 FM certificate USA

CERTIFICATE OF CONFORMITY



Member of the FM Global Group

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** **FM21US0031X**
3. **Equipment:**
Model KB2 Keyboard
Model PD2 Pointing Device
Model KM2 Keyboard Matrix Interface
Model KB2-HSG Keyboard with Enclosure
Model UB03 Universal Box

FM Approvals
4. **Name of Listing Company:** **R Stahl HMI Systems GmbH**
5. **Address of Listing Company:**
Adolf-Grimme-Allee 8
Cologne, 50829
Germany
6. The examination and test results are recorded in confidential report number:

PR459390 dated 26th April 2022
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

 FM Class 3600:2022, FM Class 3610:2021, FM Class 3611:2021, FM Class 3616:2022
 FM Class 3810:2021, ANSI/IEC 60529:2004 (R2011), ANSI/UL 50:2020, ANSI/UL 50E:2020, ANSI/UL-60079-0:2019, ANSI/UL 60079-5:2016, ANSI/UL-60079-7:2016, ANSI/UL 60079-15:2013, ANSI/UL-60079-31:2015, ANSI/UL 60079-11:2014, ANSI/UL-121201:2017

FM Approvals
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

Certificate issued by:



J/E. Marquedant
VP, Manager - Electrical Systems

26 April 2022
Date

FM Approvals

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
 T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmaprovals.com www.fmaprovals.com

F 347 (Apr 21)



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SCHEDULE



US Certificate Of Conformity No: FM21US0031X

10. Equipment Ratings:

See Annex

11. The marking of the equipment shall include:

See Annex

12. **Description of Equipment:**

General

The Models KB2, PD2 and KM2 devices are used to enter data, commands etc. on PCs and similar devices in hazardous areas. The devices are intended to be connected to intrinsically safe USB interfaces. Power supply and data communication takes place via the USB interface.

The Model KB2 Keyboard is a keyboard frontplate with the keyboard electronics exposed on the backside.

The Model PD2 Pointing Device is an optional extension to the keyboard frontplate, also with the electronics exposed on the backside. The Model PD2 pointing device contains either a trackball, joystick or touchpad.

The Model KM2 is a Keyboard Matrix Interface is intended for connection between passive keypad buttons and a USB interface. This is a separate device that is not part of the Model KB2 Keyboard System. The interface module is required to be installed inside of a final enclosure having a minimum rating of IP20.

The Model UB03 Universal Box is a device which is available in various function designs such as a RFID reader, an Ethernet extender, an audio amplifier, a power supply, or LED lighting. The Model UB03 Universal Box is either a stand-alone device or installed as part of the KB2-HSG Keyboard Enclosure.

The Model KB2 keyboard frontplate and the Model PD2 Pointing Device, with exposed backside electronics, is required to be installed into a cutout to complete a final enclosure. The final enclosure is required to have a minimum rating of IP20. The UB03 Universal Box housing has an enclosure rating of IP64 or Type 3 as a stand-alone enclosure.

The Model KB2 Electronics, the PD2 Pointing Device, and the UB03 Universal Box, have an outer enclosure rim with a gasket for sealing when installed to make up a final enclosure. The gasket seals of the Model KB2 Keyboard, Model PD2 Pointing Device, and UB03 Universal Box, were verified to comply with Type 3X or Type 3 requirements to UL50e, to dust exclusion requirements of ANSI/UL60079-0 and FM3616, and to enclosure protection IP64 to ANSI/UL 60529.

The Model KB2 Keyboard with Option HSG, is a complete keyboard enclosure. The Model KB2 Keyboard Enclosure, (Option HSG), contains the KB2 Keyboard, and may be fitted with the Model PD2 pointing device and/or with the Model UB03 Universal Box.

Mechanical Construction

The Model KB2 keyboard, without the pointing device, is approximately 465mm by 185mm. The keyboard, with the pointing device, is approximately 580mm by 185mm. The pointing device alone is 143mm by 185mm. The enclosure materials are constructed of 304 or 316 stainless steel or aluminum. The keys have a foil overlay with a rubber seal underneath the foil overlay.

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmaprovals.com www.fmaprovals.com

F 347 (Apr 21)

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SCHEDULE



US Certificate Of Conformity No: FM21US0031X

The Model KM2 is a Keyboard Matrix Interface module is metallic and is intended to be installed inside a final enclosure. The KM2 module is approximately 147mm by 107mm by 35mm.

The Model KB2-HSG is a complete keyboard housing. The housing contains the Model KB2 electronics and may also contain the PD2 pointing device and/or the UB03 Universal Box. The KB2-HSG enclosure is approximately 635mm in width by 258mm in length by 92mm in depth. The KB2-HSG with UB03 enclosure is approximately 778mm in width by 258mm in length by 92mm in depth.

The KB2-HSG final housing material is constructed of 304 or 316 stainless steel.

The Model UB03 Universal Box enclosure is approximately 125mm in width by 185mm in length by 55mm in depth. The Model UB03 Universal box has two wire entries on the bottom side. Wire entry into the UB03 Universal Box is made from inside the KB2-HSG Keyboard Enclosure. Model UB03 Universal Box has an outer rim with a gasket seal that completes the installation when installed as an option for the Model KB2-HSG Keyboard Enclosure.

The Model UB03 housing material is constructed of coated or anodized aluminum EN AW-6061, AlMg1SiCu / EN AC-44300, AISi12(Fe). The surface is constructed of safety glass with a polyester foil over-lay.

See Annex for electrical ratings and environmental ratings.

13. Specific Conditions of Use:

See Annex

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
26 th April 2022	Original Issue. Report Reference: PR459390 dated 26 th April 2022. Description of the Change: Original Issue for Models KB2 Keyboard, PD2 Pointing Device and KM2 Keyboard Matrix Interface, Report Reference: PR459444 dated 26 th April 2022. Description of the Change: Addition of the KB2-HSG Enclosure.

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US Certificate Of Conformity No: FM21US0031X

	Report Reference: PR459445 dated 26 th April 2022. Description of the Change: Addition of the UB03 Universal Box and KB2-HSG Enclosure with UB03 Universal Box
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ANNEX

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KB2-a-b-c-d*-e-f. Keyboard Electronics.**Equipment Rating**

Nonincendive (NIFW) for use in Class I, Division 2, Groups A, B, C and D; Temperature Class T4 Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 1, AEx ia IIC T4 Gb Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 2, AEx ic IIC T4 Gc Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Hazardous (Classified) Locations/Explosive Atmospheres;

Note: When installed as part of a final enclosure, the gasket seals of the Model KB2 Keyboard were verified to comply with Type 3X or Type 3 requirements to UL50e, to dust exclusion requirements of ANSI/UL60079-0 and FM3616, and to enclosure protection IP64 to ANSI/UL 60529.

*Type 3X (when option d = V2 or V4); Type 3 (when option d = AP, AL or ST)

Markings

NONINCENDIVE CLASS I, DIVISION 2, GROUPS A, B, C, D;
IS CLASS I, ZONE 1, AEx ia IIC T4 Gb
IS CLASS I, ZONE 2, AEx ic IIC T4 Gc
TEMP CLASS T4 Tamb = -40°C to +70°C;
INSTALL PER CONTROL DRAWING NO. 10591400;

Description**KB2-a-b-c-d-e-f. Keyboard Electronics.**

a = Approval: Z1 or Z2.

b = Interface: USB or PS2.

c = Type of pointing device: 00, TB, TP or JS.

d = Front plate material: AP, AL, V2, V4 or ST.

e = Surface Front foil: P or V.

f = Any alphanumeric or symbol characters not related to electrical or mechanical items.

Electrical Ratings

For type of protection intrinsic safety and nonincendive, connections can only made by connecting certified associated apparatus having entity parameters. The output of the associated apparatus shall not exceed the Entity parameters for the Model KB2 Keyboard as shown below.

Zone 1

Ui = 5.9Vdc, Ii = 319mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

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Division 2, Zone 2

Ui = 5.9Vdc, Ii = 250mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

The Model KB2 Keyboard shall be installed in accordance with control drawing 10591400 for Intrinsically Safe and Nonincendive field wiring compliance.

Environmental Ratings

The Model KB2 Keyboard, with exposed backside electronics, is required to be installed into a final cutout enclosure having a minimum enclosure rating of IP20. The ambient temperature range of the Model KB2 Keyboard is -40°C to +70°C.

Specific Conditions of Use

1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The equipment shall be installed to complete the final enclosure and the final enclosure shall have a minimum enclosure protection of IP20.
3. The connection cable contains two separate intrinsically safe circuits when The Model PD2 pointing device (Option c= TB, TP or JS) is included, and shall be installed as such. The equipment shall be installed in such a way that mechanical effects (pulling forces) on the cable are excluded. The cable shall be fixed and effectively protected against damage.
4. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, particularly when it is used for applications that specifically require Group III, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces.
5. The Model KB2 Keyboard may contain metallic materials which are considered a potential risk of ignition by impact or friction. Care must be taken into account to prevent impact and friction.

PD2-a-b-c-d*-e-f. Pointing Device.

Equipment Rating

Nonincendive (NIFW) for use in Class I, Division 2, Groups A, B, C and D; Temperature Class T4 Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 1, AEx ia IIC T4 Gb Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 2, AEx ic IIC T4 Gc Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Hazardous (Classified) Locations/Explosive Atmospheres;

Note: When installed as part of a final enclosure, the gasket seals of the Model PD2 Pointing Device were verified to comply with Type 3X or Type 3 requirements to UL50e, to dust exclusion requirements of ANSI/UL60079-0 and FM3616, and to enclosure protection IP64 to ANSI/UL 60529.

*Type 3X (when option d = V2 or V4); Type 3 (when option d = AP, AL or ST)

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Markings

NONINCENDIVE CLASS I, DIVISION 2, GROUPS A, B, C, D;
 IS CLASS I, ZONE 1, AEx ia IIC T4 Gb
 IS CLASS I, ZONE 2, AEx ic IIC T4 Gc
 TEMP CLASS T4 Tamb = -40°C to +70°C;
 INSTALL PER CONTROL DRAWING NO. 10591400;

Description**PD2-a-b-c-d-e-f. Pointing Device.**

a = Approval: Z1 or Z2.
 b = Interface: USB or PS2.
 c = Type of pointing device: TB, TP or JS.
 d = Front plate material: AP, AL, V2, V4 or ST.
 e = Surface Front foil: P or V.
 f = Any alphanumeric or symbol characters not related to electrical or mechanical items.

Electrical Ratings

For type of protection intrinsic safety and nonincendive, connections can only be made by connecting certified associated apparatus having entity parameters. The output of the associated apparatus shall not exceed the Entity parameters for Model PD2 Pointing Device as shown below.

Zone 1

Ui = 5.9Vdc, Ii = 319mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

Division 2, Zone 2

Ui = 5.9Vdc, Ii = 250mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

The Model PD2 Pointing Device shall be installed in accordance with control drawing 10591400 for Intrinsically Safe and Nonincendive field wiring compliance.

Environmental Ratings

The Model PD2 Pointing Device, with exposed backside electronics, is required to be installed into a final cutout enclosure having a minimum enclosure rating of IP20. The ambient temperature range of the Model PD2 Pointing device is -40°C to +70°C.

Specific Conditions of Use

1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The equipment shall be installed to complete the final enclosure and the final enclosure shall have a minimum enclosure protection of IP20.
3. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, particularly when it is used for applications that specifically require Group III, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces.
4. The Model PD2 pointing device may contain metallic materials which are considered a potential risk of ignition by impact or friction. Care must be taken into account to prevent impact and friction.

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KM2-a-b-c-d-e-f. Keyboard Matrix Interface.**Equipment Rating**

Nonincendive (NIFW) for use in Class I, Division 2, Groups A, B, C and D; Temperature Class T4 Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 1, Ex ia IIC T4 Gb Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 2, Ex ic IIC T4 Gc Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Hazardous (Classified) Locations/Explosive Atmospheres.

Markings

NONINCENDIVE CLASS I, DIVISION 2, GROUPS A, B, C, D;
IS CLASS I, ZONE 1, AEx ia IIC T4 Gb
IS CLASS I, ZONE 2, AEx ic IIC T4 Gc
TEMP CLASS T4 Tamb = -40°C to +70°C;
INSTALL PER CONTROL DRAWING NO. 10591400;

Description**KM2-a-b-c-d-e-f.**

a = Approval: Z1 or Z2.

b = Interface: USB or PS2.

c = Type of pointing device: 00.

d = Front plate material: AP, AL, V2, V4 or ST.

e = Surface Front foil: 0.

f = Any alphanumeric or symbol characters not related to electrical or mechanical items.

Electrical Ratings

For type of protection intrinsic safety and nonincendive, connections can only made by connecting certified associated apparatus having entity parameters. The output of the associated apparatus shall not exceed the Entity parameters for the Model KM2 Keyboard Matrix Interface as shown below.

Terminal Block X1:

Zone 1

Ui = 5.9Vdc, Ii = 319mA, Pi = 650mW, Ci = 20.5µF, Li = 1.68µH

Division 2, Zone 2

Ui = 5.9Vdc, Ii = 250mA, Pi = 650mW, Ci = 20.5µF, Li = 1.68µH

Terminals for connection of an external keyboard :

Terminal Block X2, X3, X4:

Uo = Ui, Io = 250mA, Po = Pi, Co = 0.5µF, Lo = 0.5µF.

The Model KM2 Keyboard Matrix Interface shall be installed in accordance with control drawing 10591400 for

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Intrinsically Safe and Nonincendive field wiring compliance.

Environmental Ratings

The Model KM2 Keyboard Matrix Interface is required to be installed in a final housing having a minimum enclosure rating of IP20. The ambient temperature range of the Model KM2 Keyboard Matrix is -40°C to +70°C.

Specific Conditions of Use

1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The equipment shall be installed in a final enclosure having minimum protection of IP20 and be in compliance with the mounting, spacing and segregation requirements of the ultimate application.

KB2-a-b-c-d*-e-f-HSGhijkl00n. Keyboard.

Equipment Rating

Intrinsically Safe (Entity) for use in Class II, III, Division 1, Groups E, F and G; Temperature Class T4 Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Nonincendive (NIFW) for use in Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; Temperature Class T4 Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Dust-Ignitionproof for use in Class II, III, Division 1, Groups E, F and G; Temperature Class T4 Tamb = -40°C to +70°C;

Intrinsically safe (Entity) for use in Class I, Zone 1, AEx ia IIC T4 Gb Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Intrinsically safe (Entity) for use in Zone 21, AEx ia IIIC T135°C Db Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Intrinsically safe (Entity) for use in Class I, Zone 2, AEx ic IIC T4 Gc Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Intrinsically safe (Entity) for use in Zone 22, AEx ic IIIC T135°C Dc Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Hazardous (Classified) Locations/Explosive Atmospheres;

Enclosure Degree of Protection IP64,

*Enclosure Type 3X (when option d = V2 or V4);

*Enclosure Type 3 (when option d = AP, AL or ST)

Markings

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INTRINSICALLY SAFE CLASS II, III, DIVISION 1, GROUPS E, F, G;
 NONINCENDIVE CLASS I, II, III, DIVISION 2, GROUPS A, B, C, D, E, F, G;
 DUST-IGNITIONPROOF CLASS II, III, DIVISION 1, Groups E, F, G;
 IS CLASS I, ZONE 1, AEx ia IIC T4 Gb
 IS ZONE 21, AEx ia IIIC T135°C Db
 IS CLASS I, ZONE 2, AEx ic IIC T4 Gc
 IS Zone 22, AEx ic IIIC T135°C Dc
 TEMP CLASS T4 Tamb = -40°C to +70°C;
 INSTALL PER CONTROL DRAWING NO. 10591401;
 IP64
 Type 3X (when option d = V2 or V4);
 Type 3 (when option d = AP, AL or ST)

Description

KB2-a-b-c-d-e-f-HSGhijkl00n. Keyboard.

a=Zone: Z1 or Z2.
 b=Type of interface: USB or PS2.
 c= Type of pointing device: 00, TB, TP or JS
 d= Front plate material: AP, AL, V2, V4, or ST.
 e= Surface front foil: P or V.
 f= Layout: US, DE, CN, FR, DK, SL, ES, SE, JP, 00= no keyboard layout
 h= Sealing: 1 or 2.
 i= Housing material: V2 or V4.
 j= Coating: N, P or M.
 k= Mounting option: M00, M01, M02, M03, M04, C00, C01, B01 B02:
 l= Design option: S or G.
 m= Accessory: 00.
 n= any alphanumeric or symbol characters, without relevance to hazardous location protection.

Electrical Ratings

For type of protection intrinsic safety and nonincendive, connections can only made by connecting certified associated apparatus having entity parameters. The output of the associated apparatus shall not exceed the Entity parameters for the Model KB2 Keyboard as shown below.

Zone 1

Ui = 5.9Vdc, Ii = 319mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

Division 2, Zone 2

Ui = 5.9Vdc, Ii = 250mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

Environmental Ratings

The Model KB2 Keyboard Enclosure (Option HSG) is rated for Enclosure Protection IP64. The aluminum versions are rated for Type 3 and the stainless steel version are rated for Type 3X, as noted on the product labels. The ambient temperature range of the Model KB2 Keyboard is -40°C to +70°C.

Specific Conditions of Use

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1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, particularly when it is used for applications that specifically require Group III, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces.
3. The Model KB2 keyboard may contain metallic materials which are considered a potential risk of ignition by impact or friction. Care must be taken into account to prevent impact and friction.

UB03-a-bc. Universal Box.

Equipment Rating

Nonincendive for use in Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; Temperature Class T4 Tamb = -40°C to +70°C;

Increased Safety and Powder Filled use in Class I, Zone 1, AEx eb q IIC T4 Gb; Tamb = -40°C to +70°C;

Increased Safety and Type of protection "n" for use in Class I, Zone 2, AEx ec nC IIC T4 Gc Tamb = -40°C to +70°C;

Dust ignition protection by enclosure "t" for use in Zone 21, AEx tb IIIC T115°C Db Tamb = -40°C to +70°C;

Dust ignition protection by enclosure "t" for use in Zone 22, AEx tc IIIC T115°C Db Tamb = -40°C to +70°C;

Hazardous (Classified) Locations/Explosive Atmospheres;

Enclosure Degree of Protection IP64, Type 3

Note: When installed as part of a final enclosure, the gasket seals of the Model UB03 Universal Box were verified to comply with Type 3 requirements to UL50e, to dust exclusion requirements of ANSI/UL60079-0 and FM3616, and to enclosure protection IP64 to ANSI/UL 60529.

Markings

NONINCENDIVE CLASS I, II, III, DIVISION 2, GROUPS A, B, C, D, E, F G;
 DIP CLASS II, III, DIVISION 1, GROUPS E, F, G;
 CLASS I, ZONE 1, AEx eb q IIC T4 Gb;
 CLASS I, ZONE 2, AEx ec nC IIC T4 Gc
 ZONE 21, AEx tb IIIC T115°C Db
 Zone 22, AEx tc IIIC T115°C DC
 TEMP CLASS T4 Tamb = -40°C to +70°C;
 IP64, Type 3

Description

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UB03-a-bc. Universal Box.

a= Approval: Z1 or Z2

b= Options: RFID-C3-USB, RFID-C4-USB, RFID-C5-USB, RFID-C6-USB, RFID-C7-USB, RFID-C3-RS422, RFID-C4-RS422, RFID-C5-RS422, RFID-C6-RS422, RFID-C7-RS422, CON-USB, CON-UTP, AMP-Audio, DSP-10 and/or Ill-LED.

c = Any alphanumeric or symbol characters not related to electrical or mechanical items.

Electrical Ratings

The Model UB03 Universal box has various supply parameters depending on its function. The nominal supply parameters are as follows:

Power:

Terminal block X1. Pin1: 5-30Vdc, $\leq 1A$, $\leq 30W$

Data Interface,

Terminal block X1, Pin 2 and 3: 5V ac or dc

Terminal block X1, Pin 2 and 3: (for "UB03-*RFID-*RS422*" only): $\leq 30V$ ac or dc, $\leq 1A$

Terminal block X1, Pin 2 and 3 (for "UB03-*AMP-Audio*" and "UB03-*DSP-10*" only): 30V ac or dc

Terminal block X2: 5V ac or dc

Environmental Ratings

The Model UB03 Universal Box is rated for Enclosure Protection IP64 and for Type 3. The ambient temperature range of the Model UB03 Universal Box is $-40^{\circ}C$ to $+70^{\circ}C$.

Specific Conditions of Use

1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, particularly when it is used for applications that specifically require Group III, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces.
3. The Model UB03 Universal Box contains metallic materials which are considered a potential risk of ignition by impact or friction. Care must be taken into account to prevent impact and friction.

KB2-a-b-c-d-e-f-HSGhijklU3n. Keyboard.

Equipment Rating

Nonincendive for use in Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; Temperature Class T4 Tamb = $-40^{\circ}C$ to $+70^{\circ}C$;

Dust-Ignitionproof for use in Class II, III, Division 1, Groups E, F and G; Temperature Class T4 Tamb = $-40^{\circ}C$ to $+70^{\circ}C$;

Increased Safety and Powder Filled use in Class I, Zone 1, AEx eb q IIC T4 Gb; Tamb = $-40^{\circ}C$ to $+70^{\circ}C$;

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Increased Safety and Type of protection "n" for use in Class I, Zone 2, AEx ec nC IIC T4 Gc Tamb = -40°C to +70°C;

Dust ignition protection by enclosure "t" for use in Zone 21, AEx tb IIIC T115°C Db Tamb = -40°C to +70°C;

Dust ignition protection by enclosure "t" for use in Zone 22, AEx tc IIIC T115°C Db Tamb = -40°C to +70°C;

Hazardous (Classified) Locations/Explosive Atmospheres;

Enclosure Degree of Protection IP64, Type 3

Markings

NONINCENDIVE CLASS I, II, III, DIVISION 2, GROUPS A, B, C, D, E, F, G;
 DIP CLASS II, III, DIVISION 1, GROUPS E, F, G;
 CLASS I, ZONE 1, AEx eb q IIC T4 Gb;
 CLASS I, ZONE 2, AEx ec nC IIC T4 Gc
 ZONE 21, AEx tb IIIC T115°C Db
 Zone 22, AEx tc IIIC T115°C DC
 TEMP CLASS T4 Tamb = -40°C to +70°C;
 IP64, Type 3

Description**KB2-a-b-c-d-e-f-HSGhijklU3n. Keyboard.**

a=Zone: Z1 or Z2.

b=Type of interface: USB or PS2.

c= Type of pointing device: 00, TB, TP or JS

d= Front plate material: AP, AL, V2, V4, or ST.

e= Surface front foil: P or V.

f= Layout: US, DE, CN, FR, DK, SL, ES, SE, JP, 00= no keyboard layout

h= Sealing: 1 or 2.

i= Housing material: V2 or V4.

j= Coating: N, P or M.

k= Mounting option: M00, M01, M02, M03, M04, C00, C01, B01 B02:

l= Design option: S or G.

m= Accessory: U3.

n= any alphanumeric or symbol characters, without relevance to hazardous location protection.

Electrical Ratings

The Model KB2-HSG Keyboard with the Model UB03 Universal box has various supply parameters depending on its function.

For type of protection intrinsic safety 'ic' and nonincendive field wiring, connections can only be made by connecting certified associated apparatus having entity parameters. The output of the associated apparatus shall not exceed the Entity parameters for the Model KB2 Keyboard as shown below.

Division 2, Zone 2

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Ui = 5.9Vdc, Ii = 250mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

The nominal operating parameters of the UB03 Universal Box are shown below. The Model UB03 does not have Nonincendive Field Wiring or Intrinsically Safe 'ic' entity inputs. Wiring is required to be installed per the National Electrical Code.

Power:

Terminal block X1, Pin1: 5-30Vdc, ≤ 1A, ≤ 30W

Data Interface,

Terminal block X1, Pin 2 and 3: 5V ac or dc

Terminal block X1, Pin 2 and 3: (for "UB03-*-RFID-*-RS422*" only): ≤ 30V ac or dc, ≤ 1A

Terminal block X1, Pin 2 and 3 (for "UB03-*-AMP-Audio*" and "UB03-*-DSP-10*" only): 30V ac or dc

Terminal block X2: 5V ac or dc

Environmental Ratings

The Model KB2-HSG Keyboard Enclosure with the Model UB03 Universal Box is rated for Enclosure Protection IP64 and for Type 3. The ambient temperature range of the Model KB2 Keyboard is -40°C to +70°C.

Specific Conditions of Use

1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, particularly when it is used for applications that specifically require Group III, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces.
3. The Model KB2 keyboard may contain metallic materials which are considered a potential risk of ignition by impact or friction. Care must be taken into account to prevent impact and friction.

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7 FM certificate Canada

CERTIFICATE OF CONFORMITY



Member of the FM Global Group

1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
2. **Certificate No:** **FM21CA0022X**
3. **Equipment:**
Model KB2 Keyboard
Model PD2 Pointing Device
Model KM2 Keyboard Matrix Interface
Model KB2-HSG Keyboard with Enclosure
Model UB03 Universal

(Type Reference and Name)
4. **Name of Listing Company:** **R Stahl HMI Systems GmbH**
5. **Address of Listing Company:**
Adolf-Grimme-Allee 8
Cologne, 50829
Germany
6. The examination and test results are recorded in confidential report number:

PR459390 dated 26th April 2022
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

C22.2 NO. 0.4-17:2017, C22.2 NO. 0.5-16:2016, C22.2 No. 25-17:2017, C22.2 No. 94.1-15:2015,
 C22.2 No. 94.2-15:2015, CSA C22.2 No. 213-17:2017, CAN/CSA-C22.2 No. 60079-0:2019, CAN/CSA-
 C22.2 No. 60079-5:2016, CAN/CSA-C22.2 No. 60079-7:2016, CAN/CSA-C22.2 No. 60079-11:2014,
 CAN/CSA-C22.2 No. 60079-15:2018, CAN/CSA-C22.2 No. 60079-31:2015,
 CAN/CSA-C22.2. 60529:2016, CAN/CSA-C22.2 No. 61010-1-12:2012 (R2017)
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

Certificate issued by:



 J.E. Marquedant
 VP, Manager - Electrical Systems

26 April 2022

 Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

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10. Equipment Ratings:

See Annex

11. The marking of the equipment shall include:

See Annex

12. **Description of Equipment:**

General

The Models KB2, PD2 and KM2 devices are used to enter data, commands etc. on PCs and similar devices in hazardous areas. The devices are intended to be connected to intrinsically safe USB interfaces. Power supply and data communication takes place via the USB interface.

The Model KB2 Keyboard is a keyboard frontplate with the keyboard electronics exposed on the backside.

The Model PD2 Pointing Device is an optional extension to the keyboard frontplate, also with the electronics exposed on the backside. The Model PD2 pointing device contains either a trackball, joystick or touchpad.

The Model KM2 is a Keyboard Matrix Interface is intended for connection between passive keypad buttons and a USB interface. This is a separate device that is not part of the Model KB2 Keyboard System. The interface module is required to be installed inside of a final enclosure having a minimum rating of IP20.

The Model UB03 Universal Box is a device which is available in various function designs such as a RFID reader, an Ethernet extender, an audio amplifier, a power supply, or LED lighting. The Model UB03 Universal Box is either a stand-alone device or installed as part of the KB2-HSG Keyboard Enclosure.

The Model KB2 keyboard frontplate and the Model PD2 Pointing Device, with exposed backside electronics, is required to be installed into a cutout to complete a final enclosure. The final enclosure is required to have a minimum rating of IP20. The UB03 Universal Box housing has an enclosure rating of IP64 or Type 3 as a stand-alone enclosure.

The Model KB2 Electronics, the PD2 Pointing Device, and the UB03 Universal Box, have an outer enclosure rim with a gasket for sealing when installed to make up a final enclosure. The gasket seals of the Model KB2 Keyboard, Model PD2 Pointing Device, and UB03 Universal Box, were verified to comply with Type 3X or Type 3 requirements to UL50e, to dust exclusion requirements of ANSI/UL60079-0 and FM3616, and to enclosure protection IP64 to ANSI/UL 60529.

The Model KB2 Keyboard with Option HSG, is a complete keyboard enclosure. The Model KB2 Keyboard Enclosure, (Option HSG), contains the KB2 Keyboard, and may be fitted with the Model PD2 pointing device and/or with the Model UB03 Universal Box.

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Mechanical Construction

The Model KB2 keyboard, without the pointing device, is approximately 465mm by 185mm. The keyboard, with the pointing device, is approximately 580mm by 185mm. The pointing device alone is 143mm by 185mm. The enclosure materials are constructed of 304 or 316 stainless steel or aluminum. The keys have a foil overlay with a rubber seal underneath the foil overlay.

The Model KM2 is a Keyboard Matrix Interface module is metallic and is intended to be installed inside a final enclosure. The KM2 module is approximately 147mm by 107mm by 35mm.

The Model KB2-HSG is a complete keyboard housing. The housing contains the Model KB2 electronics and may also contain the PD2 pointing device and/or the UB03 Universal Box. The KB2-HSG enclosure is approximately 635mm in width by 258mm in length by 92mm in depth. The KB2-HSG with UB03 enclosure is approximately 778mm in width by 258mm in length by 92mm in depth.

The KB2-HSG final housing material is constructed of 304 or 316 stainless steel.

The Model UB03 Universal Box enclosure is approximately 125mm in width by 185mm in length by 55mm in depth. The Model UB03 Universal box has two wire entries on the bottom side. Wire entry into the UB03 Universal Box is made from inside the KB2-HSG Keyboard Enclosure. Model UB03 Universal Box has an outer rim with a gasket seal that completes the installation when installed as an option for the Model KB2-HSG Keyboard Enclosure.

The Model UB03 housing material is constructed of coated or anodized aluminum EN AW-6061, AlMg1SiCu / EN AC-44300, AlSi12(Fe). The surface is constructed of safety glass with a polyester foil over-lay.

See Annex for electrical ratings and environmental ratings.

13. Specific Conditions of Use:

See Annex

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals Canadian Certification Scheme.

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description

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<p>26th April 2022</p>	<p>Original Issue. Report Reference: PR459390 dated 26th April 2022. Description of the Change: Original Issue for Models KB2 Keyboard, PD2 Pointing Device and KM2 Keyboard Matrix Interface, Report Reference: PR459444 dated 26th April 2022. Description of the Change: Addition of the KB2-HSG Enclosure. Report Reference: PR459445 dated 26th April 2022. Description of the Change: Addition of the UB03 Universal Box and KB2-HSG Enclosure with UB03 Universal Box</p>
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ANNEX

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KB2-a-b-c-d*-e-f. Keyboard Electronics.**Equipment Rating**

Nonincendive (NIFW) for use in Class I, Division 2, Groups A, B, C and D; Temperature Class T4 Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 1, Ex ia IIC T4 Gb Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 2, Ex ic IIC T4 Gc Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Hazardous Locations/Explosive Atmospheres;

Note: When installed as part of a final enclosure, the gasket seals of the Model KB2 Keyboard were verified to comply with Type 3X or Type 3 requirements to C22.2 No. 94.2, to dust exclusion requirements of CAN/CSA-C22.2 No. 60079-0 and C22.2 No. 25-17, and to enclosure protection IP64 to CAN/CSA-C22.2. 60529.

*Type 3X (when option d = V2 or V4); Type 3 (when option d = AP, AL or ST)

Markings

NONINCENDIVE CLASS I, DIVISION 2, GROUPS A, B, C, D;
Ex ia IIC T4 Gb
Ex ic IIC T4 Gc
TEMP CLASS T4 Tamb = -40°C to +70°C;
INSTALL PER CONTROL DRAWING NO. 10591400;

Description**KB2-a-b-c-d-e-f. Keyboard Electronics.**

a = Approval: Z1 or Z2.

b = Interface: USB or PS2.

c = Type of pointing device: 00, TB, TP or JS.

d = Front plate material: AP, AL, V2, V4 or ST.

e = Surface Front foil: P or V.

f = Any alphanumeric or symbol characters not related to electrical or mechanical items.

Electrical Ratings

For type of protection intrinsic safety and nonincendive, connections can only made by connecting certified associated apparatus having entity parameters. The output of the associated apparatus shall not exceed the Entity parameters for the Model KB2 Keyboard as shown below.

Zone 1

Ui = 5.9VDC, Ii = 319mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

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Canadian Certificate Of Conformity No: FM21CA0022X

Division 2, Zone 2

Ui = 5.9Vdc, Ii = 250mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

The Model KB2 Keyboard shall be installed in accordance with control drawing 10591400 for Intrinsically Safe and Nonincendive field wiring compliance.

Environmental Ratings

The Model KB2 Keyboard, with exposed backside electronics, is required to be installed into a final cutout enclosure having a minimum enclosure rating of IP20. The ambient temperature range of the Model KB2 Keyboard is -40°C to +70°C.

Specific Conditions of Use

1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The equipment shall be installed to complete the final enclosure and the final enclosure shall have a minimum enclosure protection of IP20.
3. The connection cable contains two separate intrinsically safe circuits when The Model PD2 pointing device (Option c= TB, TP or JS) is included, and shall be installed as such. The equipment shall be installed in such a way that mechanical effects (pulling forces) on the cable are excluded. The cable shall be fixed and effectively protected against damage.
4. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, particularly when it is used for applications that specifically require Group III, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces.
5. The Model KB2 Keyboard may contain metallic materials which are considered a potential risk of ignition by impact or friction. Care must be taken into account to prevent impact and friction.

PD2-a-b-c-d*-e-f. Pointing Device.

Equipment Rating

Nonincendive (NIFW) for use in Class I, Division 2, Groups A, B, C and D; Temperature Class T4 Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 1, Ex ia IIC T4 Gb Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 2, Ex ic IIC T4 Gc Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Hazardous Locations/Explosive Atmospheres;

Note: When installed as part of a final enclosure, the gasket seals of the Model PD2 Pointing Device were verified to comply with Type 3X or Type 3 requirements to C22.2 No. 94.2, to dust exclusion requirements of CAN/CSA-C22.2 No. 60079-0 and C22.2 No. 25-17, and to enclosure protection IP64 to CAN/CSA-C22.2. 60529.

*Type 3X (when option d = V2 or V4); Type 3 (when option d = AP, AL or ST)

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Markings

NONINCENDIVE CLASS I, DIVISION 2, GROUPS A, B, C, D;
 Ex ia IIC T4 Gb
 Ex ic IIC T4 Gc
 TEMP CLASS T4 Tamb = -40°C to +70°C;
 INSTALL PER CONTROL DRAWING NO. 10591400;

Description

a = Approval: Z1 or Z2.
 b = Interface: USB or PS2.
 c = Type of pointing device: TB, TP or JS.
 d = Front plate material: AP, AL, V2, V4 or ST.
 e = Surface Front foil: P or V.
 f = Any alphanumeric or symbol characters not related to electrical or mechanical items.

Electrical Ratings

For type of protection intrinsic safety and nonincendive, connections can only made by connecting certified associated apparatus having entity parameters. The output of the associated apparatus shall not exceed the Entity parameters for Model PD2 Pointing Device as shown below.

PD2-a-b-c-d-e-f. Pointing Device.

Zone 1
 $U_i = 5.9\text{VDC}$, $I_i = 319\text{mA}$, $P_i = 650\text{mW}$, $C_i = 21\mu\text{F}$, $L_i = 1.68\mu\text{H}$
 Division 2, Zone 2
 $U_i = 5.9\text{VDC}$, $I_i = 250\text{mA}$, $P_i = 650\text{mW}$, $C_i = 21\mu\text{F}$, $L_i = 1.68\mu\text{H}$

The Model PD2 Pointing Device shall be installed in accordance with control drawing 10591400 for Intrinsically Safe and Nonincendive field wiring compliance.

Environmental Ratings

The Model PD2 Pointing Device, with exposed backside electronics, is required to be installed into a final cutout enclosure having a minimum enclosure rating of IP20. The ambient temperature range of the Model PD2 Pointing device is -40°C to +70°C.

Specific Conditions of Use

1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The equipment shall be installed to complete the final enclosure and the final enclosure shall have a minimum enclosure protection of IP20.
3. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, particularly when it is used for applications that specifically require Group III, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces.
4. The Model PD2 pointing device may contain metallic materials which are considered a potential risk of ignition by impact or friction. Care must be taken into account to prevent impact and friction.

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KM2-a-b-c-d-e-f. Keyboard Matrix Interface.

Equipment Rating

Nonincendive (NIFW) for use in Class I, Division 2, Groups A, B, C and D; Temperature Class T4 Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 1, Ex ia IIC T4 Gb Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Intrinsically safe (Entity) for use in Class I, Zone 2, Ex ic IIC T4 Gc Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591400;

Hazardous Locations/Explosive Atmospheres.

Markings

NONINCENDIVE CLASS I, DIVISION 2, GROUPS A, B, C, D;
Ex ia IIC T4 Gb
Ex ic IIC T4 Gc
TEMP CLASS T4 Tamb = -40°C to +70°C;
INSTALL PER CONTROL DRAWING NO. 10591400;

Description

KM2-a-b-c-d-e-f.

a = Approval: Z1 or Z2.

b = Interface: USB or PS2.

c = Type of pointing device: 00.

d = Front plate material: AP, AL, V2, V4 or ST.

e = Surface Front foil: 0.

f = Any alphanumeric or symbol characters not related to electrical or mechanical items.

Electrical Ratings

For type of protection intrinsic safety and nonincendive, connections can only be made by connecting certified associated apparatus having entity parameters. The output of the associated apparatus shall not exceed the Entity parameters for the Model KM2 Keyboard Matrix Interface as shown below.

Terminal Block X1:

Zone 1

Ui = 5.9VDC, Ii = 319mA, Pi = 650mW, Ci = 20.5µF, Li = 1.68µH

Division 2, Zone 2

Ui = 5.9VDC, Ii = 250mA, Pi = 650mW, Ci = 20.5µF, Li = 1.68µH

Terminals for connection of an external keyboard :

Terminal Block X2, X3, X4:

Uo = Ui, Io = 250mA, Po = Pi, Co = 0.5µF, Lo = 0.5µF.

The Model KM2 Keyboard Matrix Interface shall be installed in accordance with control drawing 10591400 for

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Intrinsically Safe and Nonincendive field wiring compliance.

Environmental Ratings

The Model KM2 Keyboard Matrix Interface is required to be installed in a final housing having a minimum enclosure rating of IP20. The ambient temperature range of the Model KM2 Keyboard Matrix is -40°C to +70°C.

Specific Conditions of Use

1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The equipment shall be installed in a final enclosure having minimum protection of IP20 and be in compliance with the mounting, spacing and segregation requirements of the ultimate application.

KB2-a-b-c-d*-e-f-HSGhijkl00n. Keyboard.**Equipment Rating**

Intrinsically Safe (Entity) for use in Class II, III, Division 1, Groups E, F and G; Temperature Class T4 Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Nonincendive (NIFW) for use in Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; Temperature Class T4 Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Dust-Tight for use in Class II, III, Division 1, Groups E, F and G; Temperature Class T4 Tamb = -40°C to +70°C;

Intrinsically safe (Entity) for use in Class I, Zone 1, Ex ia IIC T4 Gb Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Intrinsically safe (Entity) for use in Zone 21, Ex ia IIIC T135°C Db Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Intrinsically safe (Entity) for use in Class I, Zone 2, Ex ic IIC T4 Gc Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Intrinsically safe (Entity) for use in Zone 22, Ex ic IIIC T135°C Dc Tamb = -40°C to +70°C; in accordance with Control Drawing No. 10591401;

Hazardous Locations/Explosive Atmospheres;

Enclosure Degree of Protection IP64,

*Enclosure Type 3X (when option d = V2 or V4);

*Enclosure Type 3 (when option d = AP, AL or ST)

Markings

INTRINSICALLY SAFE CLASS II, III, DIVISION 1, GROUPS E, F, G;

NONINCENDIVE CLASS I, II, III, DIVISION 2, GROUPS A, B, C, D, E, F, G;

DUST-TIGHT CLASS II, III, DIVISION 1, Groups E, F, G;

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Ex ia IIC T4 Gb
 Ex ia IIIC T135°C Db
 Ex ic IIC T4 Gc
 Ex ic IIIC T135°C Dc
 TEMP CLASS T4 Tamb = -40°C to +70°C;
 INSTALL PER CONTROL DRAWING NO. 10591401;
 IP64
 Type 3X (when option d = V2 or V4);
 Type 3 (when option d = AP, AL or ST)

Description**KB2-a-b-c-d-e-f-HSGhijkl00n. Keyboard.**

a=Zone: Z1 or Z2.
 b=Type of interface: USB or PS2.
 c= Type of pointing device: 00, TB, TP or JS
 d= Front plate material: AP, AL, V2 , V4, or ST.
 e= Surface front foil: P or V.
 f= Layout: US, DE, CN, FR, DK, SL, ES, SE, JP, 00= no keyboard layout
 h= Sealing: 1 or 2.
 i= Housing material: V2 or V4.
 j= Coating: N, P or M.
 k= Mounting option: M00, M01, M02, M03, M04, C00, C01, B01 B02:
 l= Design option: S or G.
 m= Accessory: 00.
 n= any alphanumeric or symbol characters, without relevance to hazardous location protection.

Electrical Ratings

For type of protection intrinsic safety and nonincendive, connections can only made by connecting certified associated apparatus having entity parameters. The output of the associated apparatus shall not exceed the Entity parameters for the Model KB2 Keyboard as shown below.

Zone 1

Ui = 5.9VDC, Ii = 319mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

Division 2, Zone 2

Ui = 5.9VDC, Ii = 250mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

Environmental Ratings

The Model KB2 Keyboard Enclosure (Option HSG) is rated for Enclosure Protection IP64. The aluminum versions are rated for Type 3 and the stainless steel version are rated for Type 3X, as noted on the product labels. The ambient temperature range of the Model KB2 Keyboard is -40°C to +70°C.

Specific Conditions of Use

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1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, particularly when it is used for applications that specifically require Group III, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces.
3. The Model KB2 keyboard may contain metallic materials which are considered a potential risk of ignition by impact or friction. Care must be taken into account to prevent impact and friction.

UB03-a-bc. Universal Box.

Equipment Rating

Nonincendive for use in Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; Temperature Class T4 Tamb = -40°C to +70°C;

Increased Safety and Powder Filled use in Class I, Zone 1, Ex eb q IIC T4 Gb; Tamb = -40°C to +70°C;

Increased Safety and Type of protection "n" for use in Class I, Zone 2, Ex ec nC IIC T4 Gc Tamb = -40°C to +70°C;

Dust ignition protection by enclosure "t" for use in Zone 21, Ex tb IIIC T115°C Db Tamb = -40°C to +70°C;

Dust ignition protection by enclosure "t" for use in Zone 22, Ex tc IIIC T115°C Db Tamb = -40°C to +70°C;

Hazardous Locations/Explosive Atmospheres;

Enclosure Degree of Protection IP64, Type 3

Note: When installed as part of a final enclosure, the gasket seals of the Model UB03 Universal Box were verified to comply with Type 3 requirements to C22.2 No. 94.2, to dust exclusion requirements of CAN/CSA-C22.2 No. 60079-0 and C22.2 No. 25-17, and to enclosure protection IP64 to CAN/CSA-C22.2. 60529.

Markings

NONINCENDIVE CLASS I, II, III, DIVISION 2, GROUPS A, B, C, D, E, F, G;

DIP CLASS II, III, DIVISION 1, GROUPS E, F, G;

Ex eb q IIC T4 Gb;

Ex ec nC IIC T4 Gc

Ex tb IIIC T115°C Db

Ex tc IIIC T115°C DC

TEMP CLASS T4 Tamb = -40°C to +70°C;

IP64, Type 3

Description

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FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA

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SCHEDULE



Canadian Certificate Of Conformity No: FM21CA0022X

UB03-a-bc. Universal Box.

a= Approval: Z1 or Z2

b= Options: RFID-C3-USB, RFID-C4-USB, RFID-C5-USB, RFID-C6-USB, RFID-C7-USB, RFID-C3-RS422, RFID-C4-RS422, RFID-C5-RS422, RFID-C6-RS422, RFID-C7-RS422, CON-USB, CON-UTP, AMP-Audio, DSP-10 and/ or III-LED.

c = Any alphanumeric or symbol characters not related to electrical or mechanical items.

Electrical Ratings

The Model UB03 Universal box has various supply parameters depending on its function. The nominal supply parameters are as follows:

Power:

Terminal block X1. Pin1: 5-30Vdc, $\leq 1A$, $\leq 30W$

Data Interface,

Terminal block X1, Pin 2 and 3: 5V ac or dc

Terminal block X1, Pin 2 and 3: (for "UB03-*RFID-*RS422*" only): $\leq 30V$ ac or dc, $\leq 1A$

Terminal block X1, Pin 2 and 3 (for "UB03-*AMP-Audio*" and "UB03-*DSP-10*" only): 30V ac or dc

Terminal block X2: 5V ac or dc

Environmental Ratings

The Model UB03 Universal Box is rated for Enclosure Protection IP64 and for Type 3. The ambient temperature range of the Model UB03 Universal Box is $-40^{\circ}C$ to $+70^{\circ}C$.

Specific Conditions of Use

1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, particularly when it is used for applications that specifically require Group III, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces.
3. The Model UB03 Universal Box contains metallic materials which are considered a potential risk of ignition by impact or friction. Care must be taken into account to prevent impact and friction.

KB2-a-b-c-d-e-f-HSGhijklU3n. Keyboard.

Equipment Rating

Nonincendive for use in Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; Temperature Class T4 Tamb = $-40^{\circ}C$ to $+70^{\circ}C$;

Dust-Tight for use in Class II, III, Division 1, Groups E, F and G; Temperature Class T4 Tamb = $-40^{\circ}C$ to $+70^{\circ}C$;

Increased Safety and Powder Filled use in Class I, Zone 1, Ex eb q IIC T4 Gb; Tamb = $-40^{\circ}C$ to $+70^{\circ}C$;

Increased Safety and Type of protection "n" for use in Class I, Zone 2, Ex ec nC IIC T4 Gc Tamb = $-40^{\circ}C$ to $+70^{\circ}C$;
Dust ignition protection by enclosure "t" for use in Zone 21, Ex tb IIC T115°C Db Tamb = $-40^{\circ}C$ to $+70^{\circ}C$;

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SCHEDULE



Canadian Certificate Of Conformity No: FM21CA0022X

Dust ignition protection by enclosure "t" for use in Zone 22, Ex tc IIIC T115°C Db Tamb = -40°C to +70°C;

Hazardous Locations/Explosive Atmospheres;

Enclosure Degree of Protection IP64, Type 3

Markings

NONINCENDIVE CLASS I, II, III, DIVISION 2, GROUPS A, B, C, D, E, F, G;
 DIP CLASS II, III, DIVISION 1, GROUPS E, F, G;
 Ex eb q IIC T4 Gb;
 Ex ec nC IIC T4 Gc
 Ex tb IIIC T115°C Db
 Ex tc IIIC T115°C DC
 TEMP CLASS T4 Tamb = -40°C to +70°C;
 IP64, Type 3

Description

KB2-a-b-c-d-e-f-HSGhijklU3n. Keyboard.

- a=Zone: Z1 or Z2.
- b=Type of interface: USB or PS2.
- c= Type of pointing device: 00, TB, TP or JS
- d= Front plate material: AP, AL, V2, V4, or ST.
- e= Surface front foil: P or V.
- f= Layout: US, DE, CN, FR, DK, SL, ES, SE, JP, 00= no keyboard layout
- h= Sealing: 1 or 2.
- i= Housing material: V2 or V4.
- j= Coating: N, P or M.
- k= Mounting option: M00, M01, M02, M03, M04, C00, C01, B01 B02:
- l= Design option: S or G.
- m= Accessory: U3.
- n= any alphanumeric or symbol characters, without relevance to hazardous location protection.

Electrical Ratings

The Model KB2-HSG Keyboard with the Model UB03 Universal box has various supply parameters depending on its function.

For type of protection intrinsic safety 'ic' and nonincendive field wiring, connections can only be made by connecting certified associated apparatus having entity parameters. The output of the associated apparatus shall not exceed the Entity parameters for the Model KB2 Keyboard as shown below.

Division 2, Zone 2
 Ui = 5.9Vdc, Ii = 250mA, Pi = 650mW, Ci = 21µF, Li = 1.68µH

The nominal operating parameters of the UB03 Universal Box are shown below. The Model UB03 does not have Nonincendive Field Wiring or Intrinsically Safe 'ic' entity inputs. Wiring is required to be installed per the Canadian

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SCHEDULE



Canadian Certificate Of Conformity No: FM21CA0022X

Electrical Code.

Power:

Terminal block X1, Pin1: 5-30Vdc, $\leq 1A$, $\leq 30W$

Data Interface,

Terminal block X1, Pin 2 and 3: 5V ac or dc

Terminal block X1, Pin 2 and 3: (for "UB03-*RFID-*RS422*" only): $\leq 30V$ ac or dc, $\leq 1A$

Terminal block X1, Pin 2 and 3 (for "UB03-*AMP-Audio*" and "UB03-*DSP-10*" only): 30V ac or dc

Terminal block X2: 5V ac or dc

Environmental Ratings

The Model KB2-HSG Keyboard Enclosure with the Model UB03 Universal Box is rated for Enclosure Protection IP64 and for Type 3. The ambient temperature range of the Model KB2 Keyboard is $-40^{\circ}C$ to $+70^{\circ}C$.

Specific Conditions of Use

1. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
2. The non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, particularly when it is used for applications that specifically require Group III, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces.
3. The Model KB2 keyboard may contain metallic materials which are considered a potential risk of ignition by impact or friction. Care must be taken into account to prevent impact and friction.

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8 KCS certificate Korea

8.1 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.ktli.re.kr>
(52852) 경상남도 진주시 충의로 10(충무공동)

8.2 KB2 / PD2 – Z1 (Zone 21 devices)

제2021-044393-01-1호

안 전 인 증 서

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

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품 목

Keyboard

형식·모델(용량·등급) / 인증번호

KB2-Z1-****-***-***-***, PD2-Z1-****-***-***-***, KM2-Z1-****-***-***-***
(Ex ia IIIC T₂₀₀ 135 °C Db, Ex ib IIIC T₂₀₀ 135 °C Db, Ex ic IIIC T₂₀₀ 135 °C Dc) /
21-KA4BO-0774X


인 증 기 준

고용노동부고시 제2021-22호

인 증 조 건

1. 제조공장
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2. 제품개요
·당 기기는 방폭형 키보드임.
·사용주위온도: -40 °C ≤ Ta ≤ +70 °C
·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

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

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

제2021-044396-01-1호

안 전 인 증 서

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Adolf-Grimme-Allee 8, Cologne 50829, Germany

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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**
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·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)

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

제2021-044397-01-1호

안 전 인 증 서

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


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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**
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2. **제품개요**
·당 기기는 분진 방폭형 키보드임.
·사용주위온도: -40 °C ≤ Ta ≤ +70 °C
·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**
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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)

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

제2021-044398-01-1 호

안전인증서

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

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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


인증기준
고용노동부고시 제2021-22호

인증조건

- 제조공장**
·본 인증서는 'Adolf-Grimme-Allee 8, Cologne 50829, Germany'에서 생산하는 제품에 한함.
- 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
- 인증범위:** 본 인증서는 위의 형식번호에 한하여 유효함.
- 안전한 사용을 위한 조건**
·관련 IECEx 인증서(IECEX BVS 20.0084X issue No.0) 3 페이지 SPECIFIC CONDITIONS OF USE 참조.
- 인증(변경)사항:** 없음.
- 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)

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

제2021-044399-01-1 호

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 분전 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]

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(52852) 경상남도 진주시 충의로 10(충무공동)

8.7 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

9 Release Notes

The chapter entitled "Release Notes" contains all the changes made in every version of the certificates.

Version 01.00.00

- First edition

Version 01.00.01

- Addition of EAC certificate

Version 01.00.02

- Changing picture title page
- Changing title of EAC certificate
- Addition of CNEx certificates
- Addition of BIS certificate
- Addition of FM certificate for USA and Canada
- Addition of KCS certificates

Version 01.00.03

- Addition of Customer confirmation letter

Version 01.00.04

- Addition of PESO certificate
- Correction of phone and fax no.

Version 01.00.05

- Addition of chinese CCC certificates (English ones are in the Operating Instruction)
- Removing of EAC certificate
- Formal changes

Version 01.00.06

- Addition of "Renewal letter" for BIS
- Formal changes

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