



Certificates



Device version KB2, incl. HSG
KB2 Keyboards
PD2 Pointing device
KB2-HSG / PD2-HSG Assemblies



THE STRONGEST LINK.

HW-Rev.:

01.01.02

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Disclaimer

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1 Preface



This document contains all valid certificates for the KB2 product line up from HW-Rev. 01.01.02.

All technical details contained in the EC type examination certificate are also part of the associated operating instructions.

All certificates are also available on r-stahl.com, on the 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

EU-Type Examination Certificate

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

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

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

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

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

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

DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential Report No. BVS PP 20.2125 EU.

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

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

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

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

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

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, 2024-04-16

Signed: Oliver Brumm

Managing Director

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13 **Appendix**14 **EU-Type Examination Certificate**
BVS 20 ATEX E 078 X issue 0115 **Product description**15.1 **Subject and type**

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

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

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

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

CCC: Type of interface (not Ex-relevant)

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

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

F: Surface front foil
 P Polyester foil
 V Metallic foil

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

15.2 **Description****Reason for this issue:**

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

Description of equipment:

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

The HIDs are intrinsically safe apparatus.

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

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

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

The installation depends on the use:

- For use in Group II:
The devices have to be installed in such a way that at least IP20 according to EN 60529 is ensured for the backside.
- For use in Group III:
The devices have to be installed in such a way that at least IP64 according 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 Type KM2-Z1-... are intended for connection of an external keyboard.

They consist of a metallic enclosure with inner electronics.

The connection is done via external terminals.

The enclosure has IP20 according to EN 60529.

- For use in Group III:
The devices have to be installed in such a way that at least IP64 according 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).

15.3 Parameters

15.3.1 Electrical Parameters

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

Supply

via a permanently connected cable with max. 5 m length

Wires

for 8-wire cable: +5V (red resp. 5), USB_m (grey resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)

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

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	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-Z1-***-00-**-**-*:*: (Keyboard without Pointing Device)

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

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

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

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

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15.3.1.4.1

Supply

Terminal block X1

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

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

Terminal 5 is intended for connection of a cable shield.

15.3.1.4.2

Terminals for connection of an external keyboard:

Terminal blocks X2, X3, X4:

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

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

15.3.2

Thermal parameters

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

Further details are part of the manual.

16

Report Number

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

17

Specific Conditions of Use

17.1

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

For use in gas-explosive areas, the devices must be installed in a suitable enclosure to obtain at least IP20 in accordance with IEC 60529.

17.2

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

When used in dust-explosive areas, the device has to be installed in a suitable enclosure to obtain at least IP64 in accordance with EN IEC 60079-0.

When supplied with > 250 mA in dust-explosive areas:

The device must be supplied by an ia-circuit (linear characteristics).

17.3

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

The connection cable contains 2 separate intrinsically safe circuits.

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

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

17.4

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

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18 **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

19 **Remarks and additional information**

Drawings and documents are listed in the confidential report.

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

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


Managing Director

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2.2 KB2 / PD2 – Z2



Translation

Type Examination Certificate

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

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

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

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

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

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

DEKRA Testing and Certification GmbH certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential Report No. BVS PP 20.2125 EU.

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


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"**

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

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.

The marking of the product shall include the following:

 **II 3G Ex ic IIC T4 Gc**
II 3D Ex ic IIIC T₂₀₀ 135°C Dc

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

Signed: Oliver Brumm

Managing Director

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13 **Appendix**

14 **Type Examination Certificate**
BVS 20 ATEX E 079 X Issue 01

15 **Product description**

15.1 **Subject and type**

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

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

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

BB: Zone
 Z2 For use in Zone 2, 22

CCC: Type of interface (not Ex-relevant)

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

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

F: Surface front foil
 P Polyester foil
 V Metallic foil

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

15.2 **Description**

Reason for this issue:

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

Description of equipment:

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

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

The Keyboards type KB2-Z2-... and the Pointing Devices type PD2-Z2-... are intended for installation into a control board or for installation into a suitable cutout of an external enclosure. They have a metallic front plate with switches and control elements as joystick, trackball or touchpad.

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

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The installation depends on the use:

- For use in Group II:
The devices have to be installed in such a way that at least IP20 according to EN 60529 is ensured for the backside.
- For use in Group III:
The devices have to be installed in such a way that at least IP64 according to 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 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-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 to EN IEC 60079-0 is ensured for the backside.

15.3 Parameters

15.3.1 Electrical parameters

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

Supply

via a permanently connected cable with max. 5 m length

Wires

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

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

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	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-Z2-***-00-***-***:
(Keyboard without Pointing Device)

Supply

via a permanently connected cable with max. 5 m length

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

Maximum input voltage	U_i	DC	5.9	V
Maximum input current	I_i			
For Group II			319	mA
For Group III			250	mA
Maximum input power	P_i		650	mW
Effective internal capacitance	C_i		21	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-***-***,
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	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 (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	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





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

15.3.1.4.1 Supply

Terminal block X1

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

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

Further details are part of the manual.

16 **Report Number**

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

17 **Specific Conditions of Use**

17.1 Type KB2-Z2-... and type PD2-Z2-...

For use in gas-explosive areas, the devices must be installed in a suitable enclosure to obtain at least IP20 in accordance with IEC 60529.

17.2 Type KB2-Z2-... and type PD2-Z2-... and KM2-Z2-...

When used in dust-explosive areas, the device has to be installed in a suitable enclosure to obtain at least IP64 in accordance with EN IEC 60079-0.

17.3 Type KB2-Z2-***-TB-**-**-* and type KB2-Z2-***-TP-**-**-* and type KB2-Z2-***-JS-**-**-*;

The connection cable contains 2 separate intrinsically safe circuits.

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

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

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

Page 5 of 6 of BVS 20 ATEX E 079 X Issue 01 – Jobnumber A 20240211 / 343345100
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Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com





18 **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

19 **Remarks and additional information**

Drawings and documents are listed in the confidential report.

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

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


Managing Director

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



Translation

EU-Type Examination Certificate

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

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

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

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

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

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

DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential Report No. BVS PP 20.2171 EU.

This issue of the EU-Type Examination Certificate replaces the previous issue of the EU-Type Examination Certificate BVS 20 ATEX E 106 X.









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

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

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

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

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 IIIC 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 IIIC T₂₀₀ 135°C Db
		 II 2G Ex eb ia q IIC T4 Gb
		 II 2D Ex ia tb IIIC 135°C Db
		 II 2G Ex eb ib q IIC T4 Gb
		 II 2D Ex ib tb IIIC 135°C Db

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

Signed: Oliver Brumm

Managing Director

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13 **Appendix**
 14 **EU-Type Examination Certificate**
BVS 20 ATEX E 106 X issue 01

15 **Product description**
 15.1 **Subject and type**

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

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

AAA: Type
 KB2 Keyboard with Pointing Device
 PD2 Pointing device only

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

CCC: Type of interface (not Ex-relevant)

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

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

F: Surface front foil
 P Polyester foil
 V Metallic foil

GG: Layout (not Ex-relevant)

HSG: Housing

H: Sealing
 1 Sealing 1
 2 Sealing 2

II: Housing material
 V2 Housing material V2A
 V4 Housing material V4A

J: Coating
 N no coating (natural or eloxal)
 P Coating
 M Metallic coating

KKK: Mounting option
 M## Mounting options
 B## Back cover

L: Design option (not Ex-relevant)

MM: Accessory
 00 without accessory
 U3 UB03

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

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15.2 Description

Reason for this issue:

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

Description of equipment:

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

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

Variant KB2-Z1-HSG*00* or PD2-Z1-HSG*00*:

The Keyboard / Pointing Device is carried out in type of protection Intrinsic Safety "i". The variants KB2-Z1-... and PD2-Z1-... are suitable for use in areas requiring EPL Gb or Db. They have level of protection ia, when connected to an ia-circuit. When connected to an ib-circuit, they have level of protection ib.

The Keyboards type KB2-Z1... and the Pointing Devices type PD2-Z1... have a metallic front plate with switches and control elements as joystick, trackball or touchpad.

The electronic is placed behind the front plate.

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

Supplementary to Variant KB2-Z1-HSG*U3* or PD2-Z1-HSG*U3*:

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

Variants KB2-Z1-HSG*U3* or PD2-Z1-HSG*U3* are additionally supplied via a terminal box in type of protection Increased Safety "e" as part of the Universal Box.

15.3 Parameters

15.3.1 Electrical parameters

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

Supply

via a permanently connected cable with max. 5 m length

Wires

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

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

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

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

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

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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	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-**-***-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	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, ia			319	mA
For Group III, ib			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





18 **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

19 **Remarks and additional information**

Drawings and documents are listed in the confidential report.

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

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


Managing Director

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2.4 KB2 / PD2 – Z2-*-HSG*00* / *U3*



Translation

1 **Type Examination Certificate**

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

3 Type Examination Certificate Number: **BVS 20 ATEX E 107 X** Issue: **01**4 Equipment: **Keyboard with pointing device and enclosure
type KB2- Z2-CCC-DD-EE-F-GG-HSG H II J KKK L MM * or
only Pointing device type PD2- Z2-CCC-DD-EE-F-GG-HSG H II J KKK L MM ***5 Manufacturer: **R. STAHL HMI Systems GmbH**6 Address: **Adolf-Grimme Allee 8, 50829 Köln, Germany**

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

8 DEKRA Testing and Certification GmbH certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential Report No. BVS PP 20.2171 EU. This issue of the Type Examination Certificate replaces the previous issue of the Type Examination Certificate BVS 20 ATEX E 107 X.

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

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

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

11 This Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

Type KB2-Z2-...-HSG...00	 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, 2024-04-16

Signed: Oliver Brumm

Managing Director

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13 **Appendix**14 **Type Examination Certificate**
BVS 20 ATEX E 107 X Issue 0115 **Product description**15.1 **Subject and type****Keyboard with pointing device and enclosure or Pointing Device only**
Types AAA-BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM *

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

AAA: Type
KB2 Keyboard with Pointing Device
PD2 Pointing device only

BB: Zone
Z2 For use in Zone 2, 22

CCC: Type of interface (not Ex-relevant)

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

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

F: Surface front foil
P Polyester foil
V Metallic foil

GG: Layout (not Ex-relevant)

HSG: Housing

H: Sealing
1 Sealing 1
2 Sealing 2

II: Housing material
V2 Housing material V2A
V4 Housing material V4A

J: Coating
N no coating (natural or eloxal)
P Coating
M Metallic coating

KKK: Mounting option
M## Mounting options
B## Back cover

L: Design option (not Ex-relevant)

MM: Accessory
00 without accessory
U3 UB03

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

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15.2 Description

Reason for this issue:

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

Description of equipment:

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

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

Variant KB2-Z2-HSG*00* or PD2-Z1-HSG*00*:

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

Supplementary to Variant KB2-Z2-HSG*U3* or PD2-Z2-HSG*U3*:

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

15.3 Parameters

15.3.1 Electrical parameters

15.3.1.1 Type PD2-Z2-***-**-*--HSG ***** *:

(Pointing device)

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

Wires

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

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

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

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

Cable capacitance	C_c	200	pF/m
Cable inductance	L_c	1	$\mu\text{H}/\text{m}$



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





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

18 **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

19 **Remarks and additional information**

Drawings and documents are listed in the confidential report.

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

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


Managing Director





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3 IECEX certificate

3.1 KB2 / PD2

		<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 20.0065X	Page 1 of 5	<u>Certificate history:</u> Issue 0 (2020-10-19)
Status:	Current	Issue No: 1	
Date of Issue:	2024-04-22		
Applicant:	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 6 50829 Köln Germany		
Equipment:	Keyboard with pointing device type KB2-BB-CCC-DD-EE-F-*, Pointing device type PD2-BB-CCC-DD-EE-F-* and Keyboard matrix interface type KM2-BB-CCC-DD-EE-F-*		
Optional accessory:			
Type of Protection:	Intrinsic Safety "i"		
Marking:			
	Type KB2-Z1-... Type PD2-Z1-... Type KM2-Z1-...	When connected to an ia-circuit: Ex ia IIC T4 Gb Ex ia IIIC T ₂₀₀ 135°C Db When connected to an ib-circuit: Ex ib IIC T4 Gb Ex ib IIIC T ₂₀₀ 135°C Db When connected to an ic-circuit: Ex ic IIC T4 Gc Ex ic IIIC T ₂₀₀ 135°C Dc	
	Type KB2-Z2-... Type PD2-Z2-... Type KM2-Z2-...	Ex ic IIC T4 Gc Ex ic IIIC T ₂₀₀ 135°C Dc	
Approved for issue on behalf of the IECEX Certification Body:	Dr Franz Eickhoff Senior Lead Auditor, Certification Manager and officially recognised expert		
Position:			
Signature: (for printed version)	 2024-04-22		
Date: (for printed version)			
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IECEX Certificate of Conformity

Certificate No.: **IECEX BVS 20.0065X** Page 2 of 5
Date of issue: 2024-04-22 Issue No: 1

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

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

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

STANDARDS :

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

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

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

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

TEST & ASSESSMENT REPORTS:

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

Test Report:

[DE/BVS/ExTR20.0062/01](#)

Quality Assessment Report:

[DE/BVS/QAR06.0007/15](#)



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

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Date of issue: 2024-04-22

Issue No: 1

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Subject and Type

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

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

AAA: Type

KB2 Keyboard with pointing device
PD2 Pointing device only
KM2 Keyboard matrix interface

BB: Zone

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

CCC: Type of interface (not Ex-relevant)

DD: Type of pointing device

00 No pointing device
TB Trackball
TP Touchpad
JS Joystick

EE: Front plate material

AP Aluminium coated
AL Aluminium anodized
V2 Stainless steel
V4 Stainless steel
ST Steel

F: Surface front foil

P Polyester foil
V Metallic foil

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

SPECIFIC CONDITIONS OF USE: YES as shown below:

- 1 Type KB2-... and type PD2-...:
For use in gas-explosive areas, the devices must be installed in a suitable enclosure to obtain at least IP20 in accordance with IEC 60529.
- 2 Type KB2-... and type PD2-... and KM2-...:
When used in dust-explosive areas, the device has to be installed in a suitable enclosure to obtain at least IP64 in accordance with IEC 60079-0.
When supplied with > 250 mA in dust-explosive areas:
The device must be supplied by an ia-circuit (linear characteristics).
- 3 Type KB2-**-***-TB-**-**-* and type KB2-**-***-TP-**-**-* and type KB2-**-***-JS-**-**-*:
The connection cable contains 2 separate intrinsically safe circuits.
The device has to be installed in such a way that mechanical effects (pulling forces) on the cable are excluded.
The cable has to be fixed and effectively protected against damage.
- 4 The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.



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

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Date of issue: 2024-04-22

Issue No: 1

Equipment (continued):

Description

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

The HIDs are intrinsically safe apparatus.

The variants KB2-Z1-..., PD2-Z1-... and KM2-Z1-... are suitable for use in areas requiring EPL Gb or Db. They have level of protection ia, when connected to an ia-circuit. When 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 fulfil the respective enclosure requirements.
Types KB2-Z2-..., PD2-Z2-...:
The devices are suitable for installation into the cutout of an enclosure with IP64 according to IEC 60079-0. resp. into the cutout of an enclosure type of protection Ex ec or Ex tc or Ex pzc. They fulfil the respective enclosure requirements.

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

The Keyboard Matrix Interfaces Typ KM2-... are intended for connection of an external keyboard.

They consist of a metallic enclosure with inner electronics.

The connection is done via external terminals.

The enclosure has IP20 according to IEC 60529.

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

Listing of all components used referring to older standards

No components

Parameters

See Annex



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Date of issue: 2024-04-22

Issue No: 1

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

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

Annex:

[BVS_20_0065X_R. STAHL HMI_Annex_issue1.pdf](#)



IECEx Certificate of Conformity



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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
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-**-*:**
 (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



IECEX Certificate of Conformity



Certificate No.: IECEX BVS 20.0065X issue No: 1
Annex
Page 2 of 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	$\mu\text{H}/\text{m}$

1.3.2 Pointing Device-Circuit

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

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

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

Cable capacitance	C_c		200	pF/m
Cable inductance	L_c		1	$\mu\text{H}/\text{m}$

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

1.4.1 Supply

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

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

Terminal 5 is intended for connection of a cable shield.



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Certificate No.: IECEX BVS 20.0065X issue No: 1

Annex

Page 3 of 3

1.4.2 Terminals for connection of an external keyboard:

Terminal blocks X2, X3, X4:

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





Maximum output voltage	U_o	= U_i	
Maximum output current	I_o	250	mA
Maximum output power	P_o	= P_i	
Maximum external capacitance	C_o	0.5	μ F
Maximum external inductance	L_o	0.5	μ H

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.

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

		<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 20.0084X	Page 1 of 4	<u>Certificate history:</u> Issue 0 (2020-12-11)
Status:	Current	Issue No: 1	
Date of Issue:	2024-04-22		
Applicant:	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 6 50829 Köln Germany		
Equipment:	Keyboard with pointing device and enclosure type KB2- BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM * or only Pointing device type PD2- BB-CCC-DD-EE-F-GG-HSG H II J KKK L MM *		
Optional accessory:			
Type of Protection:	Intrinsic Safety "i", Type of Protection "n", Protection by Enclosure "t", Powder Filling "q", Increased Safety "e"		
Marking:	See Annex		
Approved for issue on behalf of the IECEX Certification Body:		Dr Franz Eickhoff Senior Lead Auditor, Certification Manager and officially recognised expert	
Position:		 2024-04-22	
Signature: (for printed version)			
Date: (for printed version)			
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			



IECEX Certificate of Conformity

Certificate No.: **IECEX BVS 20.0084X** Page 2 of 4
Date of issue: 2024-04-22 Issue No: 1

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

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

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

STANDARDS :

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

- [IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0
- [IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0
- [IEC 60079-15:2010](#) Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:4
- [IEC 60079-31:2022](#) Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0
- [IEC 60079-5:2015](#) Explosive atmospheres –Part 5: Equipment protection by powder filling "q"
Edition:4.0
- [IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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

TEST & ASSESSMENT REPORTS:


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

Test Report:

[DE/BVS/ExTR20.0083/01](#)

Quality Assessment Report:

[DE/BVS/QAR06.0007/15](#)

	<h1>IECEX Certificate of Conformity</h1>	
Certificate No.:	IECEX BVS 20.0084X	Page 4 of 4
Date of issue:	2024-04-22	Issue No: 1
DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)		
The Keyboard / Pointing Device certified in IECEX BVS 20.0065X with issue 01 can be optionally used.		
Annex:		
BVS_20_0084X_STAHL HMI_Annex_issue1.pdf		



IECEx Certificate of Conformity



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

Subject and Type

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

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

AAA: Type
 KB2 Keyboard with Pointing Device
 PD2 Pointing device only

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

CCC: Type of interface (not Ex-relevant)

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

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

F: Surface front foil
 P Polyester foil
 V Metallic foil

GG: Layout (not Ex-relevant)

HSG: Housing

H: Sealing
 1 Sealing 1
 2 Sealing 2

II: Housing material
 V2 Housing material V2A
 V4 Housing material V4A

J: Coating
 N no coating (natural or eloxal)
 P Coating
 M Metallic coating

KKK: Mounting option
 M## Mounting options
 B## Back cover

L: Design option (not Ex-relevant)

MM: Accessory
 00 without accessory
 U3 UB03

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



IECEx Certificate of Conformity



Certificate No.: IECEx BVS 20.0084X issue No: 1

Annex

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For Group III, ib resp. ic			250	mA
Maximum input power	P _i		650	mW
Effective internal capacitance	C _i		21	μF
Effective internal inductance	L _i		1.68	μH
For the permanently connected cable, the following values have to be respected additionally:				
Cable capacitance	C _c		200	pF/m
Cable inductance	L _c		1	μH/m
1.3.2 Pointing Device-Circuit				
Wires +5V (red resp. 5), USB-m (gray resp. 7), USB_p (pink resp. 8) and GND (blue resp. 6)				
Maximum input voltage	U _i	DC	5.9	V
Maximum input current	I _i			
For Group II			319	mA
For Group III, ia			319	mA
For Group III, ib resp. ic			250	mA
Maximum input power	P _i		650	mW
Effective internal capacitance	C _i		21	μF
Effective internal inductance	L _i		1.68	μH
For the permanently connected cable, the following values have to be respected additionally:				
Cable capacitance	C _c		200	pF/m
Cable inductance	L _c		1	μH/m
1.4 Type ***_**_***_**_**_***-HSG * * * * * U3 *: (Accessory UB03)				
1.4.1 <u>Terminal block X1, pin1</u> Non-intrinsically safe supply circuit (Power)				
Nominal voltage		DC	5...30	V
Nominal current		≤	1	A
Nominal power		≤	30	W
Max. input voltage	U _m	AC	250	V
Terminal block X1, pin 2 and 3 Non-intrinsically safe interfaces data				
Nominal voltage		AC/DC	5	V
Max. input voltage	U _m	AC	250	V
Terminal block X1, pin 2 and 3 (for "UB03-*--RFID-*--RS422*" only) Non-intrinsically safe interfaces data				
Max. voltage		AC/DC	30	V
Max. current		≤	1	A
Terminal block X1, pin 2 and 3 (for "UB03-*--AMP-Audio*" and "UB03-*--DSP-10*" only) Non-intrinsically safe interfaces data				
Max. output voltage		AC/DC	30	V
1.4.2 Terminal block X2 Non-intrinsically safe interfaces data				
Nominal voltage		AC/DC	5	V
Max. input voltage	U _m	AC	250	V
2 Thermal parameters				
Ambient temperature or temperature at the place of installation	T _a		-40 °C ... +70 °C	



IECEx Certificate of Conformity



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

Marking

- 1 Type KB2-Z1-...-HSG...00...
Type PD2-Z1-...-HSG...00...
When connected to an ia-circuit:
Ex ia IIC T4 Gb
Ex ia IIIC 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
- 2 Type KB2-Z1-...-HSG...U3...
Type PD2-Z1-...-HSG...U3...
When connected to an ia-circuit:
Ex eb ia q IIC T4 Gb
Ex ia tb IIIC T135°C Db
When connected to an ib-circuit:
Ex eb ib q IIC T4 Gb
Ex ib tb IIIC T135°C Db
When connected to an ic-circuit:
Ex eb ic q IIC T4 Gc
Ex ic tb IIIC T135°C Dc
- 3 Type KB2-Z2-...-HSG...00...
Type PD2-Z2-...-HSG...00...
Ex ic IIC T4 Gc
Ex ic IIIC T₂₀₀ 135°C Dc
- 4 Type KB2-Z2-...-HSG...U3...
Type PD2-Z2-...-HSG...U3...
Ex ec ic nC IIC T4 Gc
Ex ic tc IIIC T135°C Dc

4 Indian certificates

4.1 BIS



भारतीय मानक ब्यूरो

(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)

BUREAU OF INDIAN STANDARDS

(Ministry of Consumer Affairs, Food & Public Distribution,
Govt. of India)

मानक भवन, 9 बहादुर शाह 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	
----------------------	---	--

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.

4.2 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/104/6572 (P599287)

Dated : 10/06/2024

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

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

Sir(s),

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

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

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

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

- 1)The design and construction of the equipment shall be strictly in accordance with description, condition and drawings as mentioned in the DEKRA Testing and Certification Gmbh Test Reports referred to above.
- 2)The equipment shall be used only with approved type of accessories and associated apparatus.
- 3)Each equipment shall be marked either by raised lettering cast integrally or by plate attached permanently to the main structure to indicate conspicuously:-
 - (a) Name of the manufacturer
 - (b) Name and number by which the equipment is identified.
 - (c) Number & date of the test report of the DEKRA Testing and Certification Gmbh applicable to the equipment.
 - (d) Equipment reference number of this letter by which use of apparatus is approved.
 - (e) Protection level.
- 4) A certificate to the effect that the equipment has been manufactured strictly in accordance with the drawing referred to in the DEKRA Testing and Certification Gmbh Test report and is identical with the one tested and certified at DEKRA Testing and Certification Gmbh shall be furnished with each equipment.
- 5) The customer shall be supplied with a copy of this letter, an extract of the conditions and 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 Sengundram Indl Area

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

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

Yours faithfully,

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

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

for Chief Controller of Explosives
 Nagpur

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

This is System Generated document. Signature is not required.

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

5 Release Notes

This chapter lists the changes made in the most recent versions of these certificates document.

Version 01.01.00

- CE creation based on CE version 01.00.04
- Keyboard with "Update KB2 controller and trackball", no externally visible changes
- Removal of older release notes
- Addition of HW-Rev. on title page
- Deleting all approvals, except ATEX and IECEx
- Renew ATEX and IECEx certificates
- Formal changes

Version 01.01.01

- Addition of BIS / PESO certificate
- Formal changes

R. STAHL HMI Systems GmbH
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r-stahl.com



THE STRONGEST LINK.