



# Certificates

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VM125-ex



THE STRONGEST LINK.

Certificates version:  
Issue:

01.00.00  
09.11.2021

## Disclaimer

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We reserve the right to change our products and their specifications at any time, provided it is in the interest of technical progress. The information in the current manual (in the internet and on CD / DVD / USB stick) or in the operating instructions included with the keyboard applies.

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# 1 Preface






 **NOTICE**

This document contains all valid certificates for the VM125-ex power supply.

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](http://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 certificate

<b>IBExU Institut für Sicherheitstechnik GmbH</b> An-Institut der TU Bergakademie Freiberg		
[1]	<b>EU-TYPE EXAMINATION CERTIFICATE - Translation</b>	
[2]	Equipment or protective systems intended for use in potentially explosive atmospheres, Directive 2014/34/EU	
[3]	EU-type examination certificate number <b>IBExU16ATEX1004</b>   Issue 3	
[4]	Product: <b>Power Supply</b> Type: VM125-ex-*	
[5]	Manufacturer: R. STAHL HMI Systems GmbH	
[6]	Address: Adolf-Grimme-Allee 8 50829 Cologne GERMANY	
[7]	This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.	
[8]	IBExU Institut für Sicherheitstechnik GmbH, notified body number 0637 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 test report IB-20-3-0081/3.	
[9]	Compliance with the essential health and safety requirements has been assured by compliance with: EN IEC 60079-0:2018, EN 60079-5:2015, EN IEC 60079-7:2015/A1:2018, EN 60079-11:2012 and EN 60079-31:2014 except in respect of those requirements listed at item [18] of the schedule.	
[10]	If the sign "X" is placed after the certificate number, it indicates that the product is subject to the specific conditions of use specified in the schedule to this certificate.	
[11]	This EU-type examination certificate relates only to the design and construction of the specified product. 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:	
	 <b>II 2G Ex eb q [Ib IIC/IIB] IIC T4 Gb</b>  <b>II 2D Ex tb [Ib] IIIC T135 °C Db</b> -25 °C ≤ T <sub>amb</sub> ≤ +60 °C	
	IBExU Institut für Sicherheitstechnik GmbH Fuchsmühlenweg 7 09599 Freiberg, GERMANY	Tel: + 49 (0) 37 31 / 38 05 0 Fax: + 49 (0) 37 31 / 38 05 10
	By order  Dipl.-Ing. [FH] Henker	 - Seal - (notified body number 0637)
		Certificates without signature and seal are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.  Freiberg, 2020-06-08
	FB106100   1	Page 1/4 IBExU16ATEX1004   3

**IBExU Institut für Sicherheitstechnik GmbH**  
An-Institut der TU Bergakademie Freiberg

[13]

**Schedule**

[14]

**Certificate number IBExU16ATEX1004 | Issue 3**

[15]

**Description of product**

The supply module VM125-ex-\* consists of an enclosure made of aluminium including separate termination compartments for the connection of non-intrinsically safe circuits (type of protection "e") and intrinsically safe circuits and the PCB with the electronic components which is located in powder filling. The supply modules are used for intrinsically safe supply of an external hardware and implementation of non-intrinsically safe data signals on intrinsically safe data signals.

**Technical data**

Ambient temperature range: -25 °C up to +60 °C

Degree of protection: IP64 (EN 60529)

**Supply circuits:**

Type VM125-ex-X-DC-24V DC +24 V ± 25 %  
Type VM125-ex-X-AC-230V AC 90 – 253 V, 50 – 60 Hz

**Data circuits:**

Type VM125-ex-RS232-X (RS232) DC ±12 V, 4 mA  
Type VM125-ex-RS232-X (RS422) DC +12 V / -7 V, 4 mA  
Type VM125-ex-USB-X (USB) DC +5 V, 68 mA  
Type VM125-ex-USB-X (USB2) DC +5 V, 68 mA

**Non-intrinsically safe circuits**

Maximum voltage  $U_m$  AC 253 V

**Intrinsically safe circuits in type of protection Ex ib:**

Version RS232/RS422 (terminal X9, X10, X11; X12, X13)

Type	VM125-ex-RS232-DC-24V VM125-ex-RS232-AC-230V	VM125-ex-RS232-DC-24V-2D VM125-ex-RS232-AC-230V-2D	VM125-ex-RS232-DC-24V-600mA VM125-ex-RS232-AC-230V-600mA
$U_o$	4.9 V	4.9 V	5.3 V
$I_o$	440 mA	710 mA	1125 mA
$P_o$	(trapezoidal) 1.17 W	(trapezoidal) 1.95 W	(trapezoidal) 3.16 W
$R_i$	25 Ω	16 Ω	10 Ω
$C_i$	2.2 μF	2.2 μF	2.2 μF
	IIB	IIC	IIB
$C_o^{(1)}$	1000 μF	113 μF	1000 μF
$L_o^{(2)}$	1.3 mH	0.1 mH	0.2 mH

<sup>(1)</sup> if  $L_o$  negligible

<sup>(2)</sup> if  $C_o$  negligible

Version USB Type VM125-ex-USB-DC-24V, VM125-ex-USB-AC-230V

terminal	X11...X13, supply		X9...X11, data	
$U_o$	4.9 V		4.9 V	
$I_o$	440 mA		40 mA	
$P_o$	(trapezoidal) 1.17 W		(linear) 48 mW	
$R_i$	25 Ω		246 Ω	
$C_i$	2.2 μF		1.2 μF	
	IIB	IIC	IIB	IIC
$C_o^{(1)}$	1000 μF	113 μF	1000 μF	113 μF
$L_o^{(2)}$	0.53 mH	0.1 mH	0.53 mH	0.1 mH

<sup>(1)</sup> if  $L_o$  negligible

<sup>(2)</sup> if  $C_o$  negligible



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Version USB Type (High Power) VM125-ex-USB-DC-24V-2D, VM125-ex-USB-DC-24V-2D

terminal	X11...X13, supply		X9...X11, data	
U <sub>o</sub>	4.9 V		4.9 V	
I <sub>o</sub>	710 mA		40 mA	
P <sub>o</sub>	(trapezoidal) 1.95 W		(linear) 48 mW	
R <sub>i</sub>	16 Ω		246 Ω	
C <sub>i</sub>	2.2 μF		1.2 μF	
	IIB	IIC	IIB	IIC
C <sub>o</sub> <sup>(1)</sup>	1000 μF	113 μF	1000 μF	113 μF
L <sub>o</sub> <sup>(2)</sup>	0.53 mH	0.1 mH	0.53 mH	0.1 mH

<sup>(1)</sup> if L<sub>o</sub> negligible

<sup>(2)</sup> if C<sub>o</sub> negligible

Version USB2 Type VM125-ex-USB-DC-24V-600mA, VM125-ex-USB-AC-230V-600mA

terminal	X11...X13, supply		X9...X11, data	
U <sub>o</sub>	5.3 V		4.9 V	
I <sub>o</sub>	1125 mA		40 mA	
P <sub>o</sub>	(trapezoidal) 3.16 W		(linear) 48 mW	
R <sub>i</sub>	10 Ω		246 Ω	
C <sub>i</sub>	2.2 μF		1.2 μF	
	IIB	IIC	IIB	IIC
C <sub>o</sub> <sup>(1)</sup>	1000 μF	67 μF	1000 μF	67 μF
L <sub>o</sub> <sup>(2)</sup>	0.2 mH	0.06 mH	0.2 mH	0.06 mH

<sup>(1)</sup> if L<sub>o</sub> negligible

<sup>(2)</sup> if C<sub>o</sub> negligible

The intrinsically safe circuits are galvanically connected to the supply circuit. During installation, continuous equipotential bonding must be ensured within the hazardous area.

*Variations compared to issue 2 of this certificate:*

*Variation 1*

The sealing of supply module has been changed.

*Variation 2*

A separately certified venting element is used.

*Variation 3*

The internal boards have been changed, thus alternate fuses and resistors may be used. A EMC filter has been added. The intrinsically safe parameter remain unchanged.

[16] **Test report**

The test results are recorded in the confidential test report IB-20-3-0081/2 of 2020-06-04.

The test documents are part of the test report and they are listed there.

*Summary of the test results*

The supply module VM125-ex-\* further fulfils the requirements of explosion protection for associated apparatus of group II and category 2G, explosion group IIC or IIB and 2D in type of protection intrinsic safety "ib" in combination with increased safety, powder filling or protection by enclosure.

[17] **Specific conditions of use**

None

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**[18] Essential health and safety requirements**

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item [9], the following are considered relevant to this product, and conformity is demonstrated in the test report:

None

**[19] Drawings and Documents**

The documents are listed in the test report.

IBExU Institut für Sicherheitstechnik GmbH  
Fuchsmühlenweg 7  
09599 Freiberg, GERMANY

By order




Dipl.-Ing. [FH] Henker


Freiberg, 2020-06-08




### 3 IECEX certificate

		<h2>IECEX Certificate of Conformity</h2>	
<b>INTERNATIONAL ELECTROTECHNICAL COMMISSION</b> <b>IEC Certification System for Explosive Atmospheres</b> <small>for rules and details of the IECEX Scheme visit <a href="http://www.iecex.com">www.iecex.com</a></small>			
Certificate No.:	<b>IECEX IBE 16.0004</b>	Page 1 of 4	<u>Certificate history:</u>
Status:	<b>Current</b>	Issue No: 3	Issue 2 (2019-12-04) Issue 1 (2018-08-06) Issue 0 (2016-02-29)
Date of Issue:	2020-06-08		
Applicant:	<b>R. STAHL HMI Systems GmbH</b> Adolf-Grimme-Allee 8 Cologne 50829 Germany		
Equipment:	<b>Supply module VM125-ex-*</b>		
Optional accessory:			
Type of Protection:	<b>protection by enclosure "t" powder filling "q" increased safety "e" Intrinsic safety "i"</b>		
Marking:	Ex eb q [ib IIC/IIB] IIC T4 Gb Ex tb [ib] IIIC T135°C Db		
Approved for issue on behalf of the IECEX Certification Body:	<b>Alexander Henker</b>		
Position:	<b>Deputy Head of department Certification Body</b>		
Signature: (for printed version)	_____		
Date:	_____		
<ol style="list-style-type: none"> <li>1. This certificate and schedule may only be reproduced in full.</li> <li>2. This certificate is not transferable and remains the property of the issuing body.</li> <li>3. The Status and authenticity of this certificate may be verified by visiting <a href="http://www.iecex.com">www.iecex.com</a> or use of this QR Code.</li> </ol>			
Certificate issued by: <b>IBExU Institut für Sicherheitstechnik GmbH</b> Fuchsmühlenweg 7 09599 Freiberg Germany			

		<h2 style="text-align: right;">IECEX Certificate of Conformity</h2>	
Certificate No.:	<b>IECEX IBE 16.0004</b>	Page 2 of 4	
Date of issue:	2020-06-08	Issue No: 3	
Manufacturer:	<b>R. STAHL HMI Systems GmbH</b> Adolf-Grimme-Allee 8 Cologne 50829 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>			
<p><b>STANDARDS :</b>                  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</p>			
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 60079-31:2013 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"		
<p>This Certificate <b>does not</b> indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.</p>			
<p><b>TEST &amp; ASSESSMENT REPORTS:</b>                  A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:</p>			
<p>Test Reports:</p>			
DE/IBE/ExTR16.0005/00 DE/IBE/ExTR16.0005/03	DE/IBE/ExTR16.0005/01	DE/IBE/ExTR16.0005/02	
<p>Quality Assessment Report:</p>			
DE/BVS/QAR06.0007/10			

	<h2>IECEx Certificate of Conformity</h2>
Certificate No.: <b>IECEx IBE 16.0004</b>	Page 3 of 4
Date of issue: 2020-06-08	Issue No: 3
<b>EQUIPMENT:</b> Equipment and systems covered by this Certificate are as follows:	
<p>The supply module VM125-ex-* consists of an enclosure made of aluminium including separate termination compartments for the connection of non-intrinsically safe circuits (type of protection "e") and intrinsically safe circuits and the PCB with the electronic components which is located in powder filling.</p> <p>The supply modules are used for intrinsically safe supply of an external hardware and implementation of non-intrinsically safe data signals on intrinsically safe data signals.</p>	
For technical data see Annex to this certificate	
<b>SPECIFIC CONDITIONS OF USE: NO</b>	

	<h2>IECEX Certificate of Conformity</h2>
Certificate No.: <b>IECEX IBE 16.0004</b>	Page 4 of 4
Date of issue: 2020-06-08	Issue No: 3
<b>DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)</b>	
<ul style="list-style-type: none"><li>• The sealing of supply module has been changed.</li><li>• A separately certified venting element is used.</li><li>• The internal boards have been changed, thus alternate fuses and resistors may be used. A EMC filter has been added. The intrinsically safe parameter remain unchanged.</li></ul>	
<b>Annex:</b>	
<a href="#">Annex_IBE16.0004_03.pdf</a>	



## IECEX Certificate of Conformity - Annex



Certificate No: IECEX IBE 16.0004

Issue No: 3

Date of Issue: 2020-06-08

Page 1 of 2

**Technical data**

Ambient temperature range: -25 °C up to +60 °C

Degree of protection: IP64 (IEC 60529)

**Supply circuits:**

Type VM125-ex-X-DC-24V

DC +24 V ± 25 %

Type VM125-ex-X-AC-230V

AC 90 – 253 V, 50 – 60 Hz

**Data circuits:**

Type VM125-ex-RS232-X (RS232)

DC ±12 V, 4 mA

Type VM125-ex-RS232-X (RS422)

DC +12 V / -7 V, 4 mA

Type VM125-ex-USB-X (USB)

DC +5 V, 68 mA

Type VM125-ex-USB-X (USB2)

DC +5 V, 68 mA

**Non-intrinsically safe circuits**Maximum voltage  $U_m$ 

AC 253 V

**Intrinsically safe circuits in type of protection Ex ib:**

Version RS232/RS422 (terminal X9, X10, X11; X12, X13)

Type	VM125-ex-RS232-DC-24V VM125-ex-RS232-AC-230V	VM125-ex-RS232-DC-24V-2D VM125-ex-RS232-AC-230V-2D	VM125-ex-RS232-DC-24V-600mA VM125-ex-RS232-AC-230V-600mA
$U_o$	4.9 V	4.9 V	5.3 V
$I_o$	440 mA	710 mA	1125 mA
$P_o$	(trapezoidal) 1.17 W	(trapezoidal) 1.95 W	(trapezoidal) 3.16 W
$R_i$	25 $\Omega$	16 $\Omega$	10 $\Omega$
$C_i$	2.2 $\mu$ F	2.2 $\mu$ F	2.2 $\mu$ F
	IIB	IIC	IIB
$C_o^{(1)}$	1000 $\mu$ F	113 $\mu$ F	1000 $\mu$ F
$L_o^{(2)}$	1.3 mH	0.1 mH	0.2 mH

<sup>(1)</sup> if  $L_o$  negligible<sup>(2)</sup> if  $C_o$  negligible

Version USB Type VM125-ex-USB-DC-24V, VM125-ex-USB-AC-230V

terminal	X11...X13, supply		X9...X11, data	
$U_o$	4.9 V		4.9 V	
$I_o$	440 mA		40 mA	
$P_o$	(trapezoidal) 1.17 W		(linear) 48 mW	
$R_i$	25 $\Omega$		246 $\Omega$	
$C_i$	2.2 $\mu$ F		1.2 $\mu$ F	
	IIB	IIC	IIB	IIC
$C_o^{(1)}$	1000 $\mu$ F	113 $\mu$ F	1000 $\mu$ F	113 $\mu$ F
$L_o^{(2)}$	0.53 mH	0.1 mH	0.53 mH	0.1 mH

<sup>(1)</sup> if  $L_o$  negligible<sup>(2)</sup> if  $C_o$  negligible



# IECEx Certificate of Conformity - Annex



Certificate No: IECEx IBE 16.0004 Issue No: 3  
 Date of Issue: 2020-06-08 Page 2 of 2

Version USB Type (High Power) VM125-ex-USB-DC-24V-2D, VM125-ex-USB-DC-24V-2D

terminal	X11...X13, supply		X9...X11, data	
U <sub>o</sub>	4.9 V		4.9 V	
I <sub>o</sub>	710 mA		40 mA	
P <sub>o</sub>	(trapezoidal) 1.95 W		(linear) 48 mW	
R <sub>i</sub>	16 Ω		246 Ω	
C <sub>i</sub>	2.2 μF		1.2 μF	
	IIB	IIC	IIB	IIC
C <sub>o</sub> <sup>(1)</sup>	1000 μF	113 μF	1000 μF	113 μF
L <sub>o</sub> <sup>(2)</sup>	0.53 mH	0.1 mH	0.53 mH	0.1 mH

<sup>(1)</sup> if L<sub>o</sub> negligible  
<sup>(2)</sup> if C<sub>o</sub> negligible

Version USB2 Type VM125-ex-USB-DC-24V-600mA, VM125-ex-USB-AC-230V-600mA

terminal	X11...X13, supply		X9...X11, data	
U <sub>o</sub>	5.3 V		4.9 V	
I <sub>o</sub>	1125 mA		40 mA	
P <sub>o</sub>	(trapezoidal) 3.16 W		(linear) 48 mW	
R <sub>i</sub>	10 Ω		246 Ω	
C <sub>i</sub>	2.2 μF		1.2 μF	
	IIB	IIC	IIB	IIC
C <sub>o</sub> <sup>(1)</sup>	1000 μF	67 μF	1000 μF	67 μF
L <sub>o</sub> <sup>(2)</sup>	0.2 mH	0.06 mH	0.2 mH	0.06 mH

<sup>(1)</sup> if L<sub>o</sub> negligible  
<sup>(2)</sup> if C<sub>o</sub> negligible

The intrinsically safe circuits are galvanically connected to the supply circuit. During installation, continuous equipotential bonding must be ensured within the hazardous area.

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## 4 Release notes

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

Version 01.00.00

- First edition of certificate document
- Addition of actual certificates

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