



# Operating Instructions

**MSi-JM0100-USB**

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R. STAHL HMI Systems GmbH  
Adolf-Grimme-Allee 8  
D 50829 Köln

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## Disclaimer

Publisher and copyright holder:

R. STAHL HMI Systems GmbH  
Adolf-Grimme-Allee 8  
D 50829 Köln

Registered place of business: Cologne  
Court of registration: District court Cologne, HRB 30512  
VAT number: DE 812 454 820

Phone: (switchboard) +49 (0) 221 76 806 - 1000  
(hotline) - 5000  
Fax: - 4100  
E-mail: (switchboard) [office@stahl-hmi.de](mailto:office@stahl-hmi.de)  
(hotline) [support@stahl-hmi.de](mailto:support@stahl-hmi.de)

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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 device applies.

### Trademarks


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## Specific markings


The markings in these operating instructions refer to specific features that must be noted.


In detail, these are:


 <b>DANGER</b>	This sign alerts users to hazards that <b>will</b> result in death or serious injury if ignored !
---	---

 <b>WARNING</b>	This sign alerts users to hazards that <b>may</b> result in death or serious injury if ignored !
--	--


 <b>CAUTION</b>	This sign alerts users to hazards that may damage machinery or equipment or result in injury if ignored !
--	---

 <b>ATTENTION</b>	Information highlighted by this symbol indicates measures for the prevention of damage to machinery or equipment !
--	--

 <b>NOTICE</b>	Information highlighted by this symbol indicates important information of which particular note should be taken !
---	---

 <b>DOCUMENTATION</b>	Information highlighted by this symbol refers to a different chapter or section in this manual or other documentation or a web-page !
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## Warnings


	<p style="text-align: center;">Caution !</p> <p>The HMI device surface may heat up at ambient temperatures higher than 45 °C ! Caution at contact !</p>
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## 1 Preface

These Operating Instructions contain all aspects relevant to explosion protection for the MSi-JM0100-USB\*. They also contain information on the connection and installation (etc.) of these devices.

 <b>NOTICE</b>	All data relevant to explosion protection from the EC-type examination certificate were copied into these operating instructions.
	For the correct operation of all associated components please note, in addition to these operating instructions, all other operating instructions enclosed in this delivery as well as the operating instructions of the additional equipment to be connected !

## 2 Device function

The type MSi-JM0100-USB\* mouse is used to enter data, commands etc. on PCs and similar devices in hazardous areas.

The type MSi-JM0100-USB\* mouse is explosion-protected equipment for installation in hazardous areas, in zone 1 and 2. The devices may be connected to intrinsically safe USB interfaces. Power supply and data communication takes place via the Interface. The mouse is connected with a fixed cable.

## 3 Technical data

Function / Equipment	MSi-JM0100-USB*
Power supply	via USB interface
Connections	via a fixed connected cable, max. length 1.8 m
Cable type	0.08 mm <sup>2</sup> / AWG28
Cable wire (numbers)	4
Mouse wheel design	Tilt-Wheel
Design	Right hand design
Number of keys	5
Scanning	optical
Resolution	500 / 1000 dpi (adjustable)
Ambiant conditions	
Ambient temperature range	0°C ≤ Ta ≤ +40°C
Storage temperature	-15°C ≤ Ta ≤ +60°C
Housing color	black
Ingress protection	IP20
Dimensions [mm] [LxWxH]	107 x 66 x 41
Weight [g]	200

## 4 Conformity to standards

The MSi-JM0100-USB\* mouse complies with the following standards and directives:

Standard	Classification
<b>ATEX Directive 2014/34/EU</b>	
IEN 60079-0 : 2012	General requirements
IEC 60079-11 : 2012	Protection by intrinsic safety "i"
<b>Electromagnetic Compatibility</b>	
<b>EMV Directive</b>	
<b>2014/30/EU</b>	<b>Classification</b>
EN 61000-6-2 : 2005	Immunity
EN 61000-6-4 : 2011	Emission

## 5 Certificates

The MSi-JM0100-USB\* mouse is certified for installation in the following areas:

Europe:

according to ATEX Directive  
for installation in zones 1 and 2

International:

IECEX (International Electrotechnical Commission System for Certification to Standards for Electrical Equipment for Explosive Atmospheres)

### 5.1 ATEX


The ATEX certificate is listed under the following certification number:

Certificate number: BVS 13 ATEX E 028



### 5.2 IECEX

The IECEX certificate is listed under the following certification number:

Certificate number: IECEX BVS 13.0038

 <b>DOCUMENTATION</b>	<p>You can access all IECEX certificates on the official website of the IEC under their certificate number.  <a href="http://iecex.iec.ch/iecex/iecexweb.nsf/welcome?openform">http://iecex.iec.ch/iecex/iecexweb.nsf/welcome?openform</a>.</p>
--	---

## 6 Marking

Manufacturer	R. STAHL HMI Systems GmbH
Type code	MSi-JM0100-USB*
CE classification:	 0158
Testing authority and certificate number:	BVS 13 ATEX E 028 IECEX BVS 13.0038
Ex classification:	
ATEX Directive	 II 2 G Ex ia IIC T4 Gb
IECEX	Ex ia IIC T4 Gb

## 7 Permitted maximum values

### 7.1 Intrinsically safe values MSi-JM0100-USB\*

Output parameters:			Input parameters:		
$U_{Omax}$	=	$U_{Imax}$	$U_{Imax}$	=	5.9 V AC/DC
$I_{Omax}$	=	$I_{Imax}$	$I_{Imax}$	=	2.7 A
$P_{Omax}$	=	$P_{Imax}$	$P_{Imax}$	=	not limited
			$C_{Imax}$	=	38 $\mu$ F
			$L_{Imax}$	=	0.9 $\mu$ H


$U_{Omax}$  is identical with  $U_{Imax}$ ,  
 $I_{Omax}$  is identical with  $I_{Imax}$


## 8 Type code

MSi-JM0100-USB\*

\* any alphanumeric or symbolic characters, without relevance for explosion protection

## 9 Safety Advice

 <b>NOTICE</b>	<p>This chapter is a summary of the key safety measures. The summary is supplementary to existing rules which staff also have to study.</p>
	<p>The safety of persons and equipment in hazardous areas depends on compliance with all relevant safety regulations. Thus, the installation and maintenance staff carry a particular responsibility, requiring precise knowledge of the applicable regulations and conditions.</p>

 <b>CAUTION</b>	<p>The notes listed below in section 9.1 must be heeded to avoid injury and damage to equipment !</p>
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### 9.1 Installation and operation

Please note the following when installing and operating the device:

- The national regulations for installation and assembly apply (e.g. IEC/EN 60079-14).
- The mouse may be installed in zones 1 or 2.
- The intrinsically safe circuits must be installed according to applicable regulations.
- Cables for intrinsically safe wiring have to pass a test voltage of AC 500 V / DC 750 V. Use the values 200 pF/m and 1 µH/m at unknown cable properties. Do not use premounted interface cable of MSi-JM0100-USB\* in Zones 0 or 20.
- When the interface of intrinsically safe devices/partial intrinsically safe devices was or is connected to not intrinsically safe interfaces, the license will become void and it must be operated as a not intrinsically safe device. If the device was operated on an intrinsically safe interface with a lower level of international protection (e.g. a Ex ia device on a Ex ib interface), it must not be operated afterwards in applications for a higher level of international protection (e.g. Ex ia).
- Interconnecting several active devices in an intrinsically safe circuit may result in different safe maximum values. This could compromise intrinsic safety !
- The safe maximum values of the connected field device(s) must correspond to the values listed on the data sheet or the EC type examination certificate.
- During assembly and operation of the mouse electrostatic surface charging must not exceed that caused by manual rubbing.
- National safety and accident prevention rules.
- Generally accepted technical rules.
- Safety instructions contained in these operating instructions.
- Any damage may compromise the explosion protection !

Use the device for its intended purpose only (see "Device Function").

Incorrect or unauthorized use and non-compliance with the instructions in this manual will void any warranty on our part.

No changes to the device that compromise its explosion protection are permitted !

The device may only be installed and operated in an undamaged, dry and clean condition !



## 9.2 Cautionary note



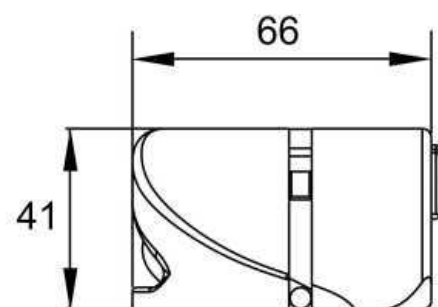
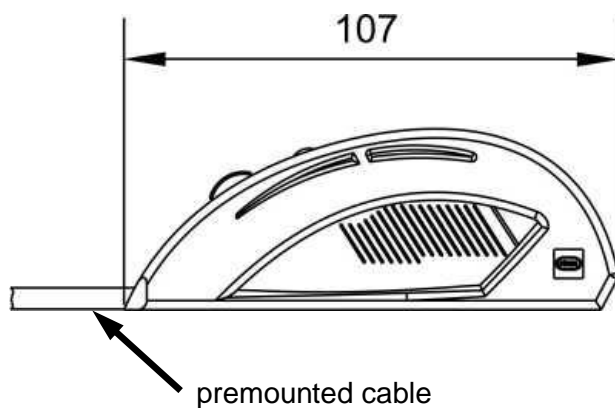
This is an EN 55022 Class A product.  
In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

## 10 Mechanical dimensions

View:



Dimensions in mm  
107 x 66 x 41 (L x W x H)




## 11 Connections Mouse

The mouse is fitted with a fixed cable which is 1.8 metres long.

Cable	Colour	Signal name	Definition
1	Red	U	Power supply input
2	White	D-	Data D-
3	Green	D+	Data D+
4	Black	GND	GND

## 12 Maintenance, service



 <b>NOTICE</b>	Associated equipment is subject to maintenance, service and testing according to guidelines 1999/92/EC, IEC/EN 60079-14, -17, -19 and BetrSichVer (Betriebssicherheitsverordnung - Occupational Safety and Health) !
---	--

Because the transmission of the devices remains reliable and stable over long periods of time, regular adjustments are not required.

### 12.1 Servicing

In accordance with IEC 60079-19 and EN 60079-17, operators of electric plants in hazardous areas are obliged to have them serviced by qualified electricians.

## 13 Troubleshooting

 <b>NOTICE</b>	Devices operated in hazardous areas must not be modified. Repairs may only be carried out by qualified, authorized staff specially trained for this purpose.
 <b>NOTICE</b>	Repairs may only be carried out by specially trained staff who are familiar with all basic conditions of the applicable user regulations and – if requested – have been authorized by the manufacturer.

## 14 Disposal

Disposal of old electric and electronic devices, packaging and used parts is subject to regulations valid in whichever country the device has been installed.

For countries under the jurisdiction of the EU the corresponding WEEE directive applies.

The mouse devices are classified according to the table below:

	old	new
Directive	WEEE I Directive 2002/96/EC	WEEE II Directive 2012/19/EU
Valid	until 14.08.2018	from 15.08.2018
Category	9 Monitoring and control devices	SG6 Small IT and telecommunication equipment <50 cm

We shall take back our devices according to our General Terms and Conditions.

### 14.1 RoHS directive 2011/65/EC

The revised version of the RoHS (restriction of hazardous substances) 2002/95/EC directive, directive 2011/65/EC, extends its area of application to all electric and electronic products.

The mouse conforms with the requirements from RoHS directive 2011/65/EU, dated 03.01.2013.

#### 14.1.1 China RoHS labelling

According to new Chinese legislation in force since 01.03.2007, all devices containing hazardous substances must be labeled accordingly.

The part of all toxic or hazardous substance contained in the homogeneous materials of the mouse is below the limit stipulated in SJ/T11363-2006.

# 15 Certificates

## 15.1 Declaration of EC conformity

**EU-Konformitätserklärung**  
*EU Declaration of Conformity*  
*Déclaration de Conformité UE*



**R. STAHL HMI Systems GmbH • Adolf-Grimme-Allee 8 • 50829 Köln, Germany**

erklärt in alleiniger Verantwortung, declares in its sole responsibility, déclare sous sa seule responsabilité,

dass das Produkt: **Maus**  
 that the product: **Mouse**  
 que le produit: **Souris**

Typ(en), type(s), type(s): **MSi-JM0100-USB\***

\*=any alphanumeric or symbolic characters, without relevance for explosion protection

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.  
 is in conformity with the requirements of the following directives and standards.  
 est conforme aux exigences des directives et des normes suivantes.

Richtlinie(n) / Directive(s) / Directive(s)		Norm(en) / Standard(s) / Norme(s)
ATEX-Richtlinie	2014/34/EU	EN 60079-0: 2012
ATEX Directive	2014/34/EU	EN 60079-11: 2012
Directive ATEX	2014/34/UE	

Kennzeichnung, marking, marquage: II 2 G Ex ia IIC T4 Gb

**CE 0158**

EG/EU-Baumusterprüfbescheinigung: **BVS 13 ATEX E 028**  
 EC/EU Type Examination Certificate:  
 Attestation d'examen CE/UE de type:  
**DEKRA EXAM GmbH (ID0158)**  
 Dinnendahlstraße 9  
 44809 Bochum  
 Germany

EMV-Richtlinie	2014/30/EU	EN 61000-6-2: 2005
EMC Directive	2014/30/EU	EN 61000-6-4: 2011
Directive CEM	2014/30/UE	

Produktnormen nach RoHS-Richtlinie (2011/65/EU):  
 Product standards according to RoHS Directive:  
 Normes des produit pour la Directive RoHS:  
 EN 50178: 1997  
 EN 61010-1: 2001+ Corrigendum / Errata

Köln, 2016-04-22

i.V.


i.V.

Ort und Datum  
 Place and date  
 Lieu et date

**J. Düren**  
 Technical Director

**W. Bertges**  
 Quality Manager

15.2 ATEX certification



**Translation**

**(1) EC-Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) No. of EC-Type Examination Certificate: **BVS 13 ATEX E 028**

(4) Equipment: **Mouse type MSi-JM0100-USB\***

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

(6) Address: **Im Gewerbegebiet Pesch 14, 50767 Köln, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.


(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test and assessment report BVS PP 13.2060 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:  
**EN 60079-0:2012 General requirements**  
**EN 60079-11:2012 Intrinsic safety „i“**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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



DEKRA EXAM GmbH  
Bochum, dated 18<sup>th</sup> march 2013

Signed: Hans Christian Simanski

---

Certification body

Signed: Dr. Franz Eickhoff

---

Special services unit

Page 1 of 2 to BVS 13 ATEX E 028  
 This certificate may only be reproduced in its entirety and without change.  
 DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Phone +49 234 3696-105 Fax +49 234 3696-110 [zs-exam@dekra.com](mailto:zs-exam@dekra.com)



- (13) Appendix to
- (14) **EC-Type Examination Certificate**  
**BVS 13 ATEX E 028**

- (15) 15.1 Subject and type  
Mouse type MSi-JM0100-USB\*

In the complete denomination, the asterisk is replaced by alphanumeric or symbolic characters without relevance for explosion protection.

15.2 Description

The Mouse type MSi-JM0100-USB\* is an intrinsically safe apparatus for connection to intrinsically safe interfaces. It is supplied via a permanently connected 4-wire-cable with max. 1,8 m length.

15.3 Parameters

- 15.3.1 Intrinsically safe power supply and data input in level of protection „Ex ia IIC“  
Wires (1,2,3)-4

Max. input voltage	U <sub>i</sub>	DC	5.9 V
Max. input current	I <sub>i</sub>		2.7 A
Max. internal capacitance	C <sub>i</sub>		38 µF
Max. internal inductance	L <sub>i</sub>		0.9 µH

The maximum internal capacitance and inductance respect a length of 1,8 m for the permanently connected cable.

Max. output voltage	U <sub>o</sub>	5.9 V <sup>1)</sup>
Max. output current	I <sub>o</sub>	2.7 A <sup>2)</sup>

<sup>1)</sup> U<sub>o</sub> identical with U<sub>i</sub>  
<sup>2)</sup> I<sub>o</sub> identical with I<sub>i</sub>

- 15.3.2 Ambient temperature range
- |                |                   |
|----------------|-------------------|
| T <sub>a</sub> | -20 °C ... +50 °C |
|----------------|-------------------|

- (16) Test and assessment report  
BVS PP 13.2060 EG as of 18<sup>th</sup> march 2013

- (17) Special conditions for safe use  
None

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 EXAM GmbH  
44809 Bochum, 18th march 2013  
BVS-Le/Ma A 20121287


  
\_\_\_\_\_  
Certification body

  
\_\_\_\_\_  
Special services unit

### 15.3 IECEx certification

		<h2 style="margin: 0;">IECEx Certificate of Conformity</h2>	
<p><b>INTERNATIONAL ELECTROTECHNICAL COMMISSION</b>  <b>IEC Certification Scheme 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></p>			
Certificate No.:	IECEx BVS 13.0038	Issue No.:	0
Status:	Current	Certificate history:	
Date of Issue:	2013-03-25	Page 1 of 3	
Applicant:	<b>R. Stahl HMI Systems GmbH</b> Im Gewerbegebiet Pesch 14 50767 Köln Germany		
Electrical Apparatus: Optional accessory:	<b>Mouse Type MSi-JM0100-USB*</b>		
Type of Protection:	<b>Equipment protection by intrinsic safety "i"</b>		
Marking:	<b>Ex ia IIC T4 Gb</b>		
Approved for issue on behalf of the IECEx Certification Body:	H. Ch. Simanski		
Position:	Head of Certification Body		
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 the Official IECEx Website.			
Certificate issued by:	DEKRA EXAM GmbH Dimmendahlstrasse 9 44809 Bochum Germany		
			

	<h2>IECEX Certificate of Conformity</h2>	
Certificate No.:	IECEX BVS 13.0038	
Date of Issue:	2013-03-25	Issue No.: 0
		Page 2 of 3
Manufacturer:	<b>R. Stahl HMI Systems GmbH</b> Im Gewerbegebiet Pesch 14 50767 Köln Germany	
Additional Manufacturing location (s):		
<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>		
<b>STANDARDS:</b> The electrical apparatus 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.		
<b>IEC 60079-0 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 0: General requirements	
<b>IEC 60079-11 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"	
<p><i>This Certificate <b>does not</b> indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.</i></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		
<u>Test Report:</u> DE/BVS/ExTR13.0039/00		
<u>Quality Assessment Report:</u> DE/BVS/QAR06.0007/06		

		<h2 style="margin: 0;">IECEX Certificate of Conformity</h2>
Certificate No.:	IECEX BVS 13.0038	
Date of Issue:	2013-03-25	Issue No.: 0
		Page 3 of 3
<b>Schedule</b>		
<b>EQUIPMENT:</b>		
<i>Equipment and systems covered by this certificate are as follows:</i>		
<b>Subject and type</b>		
Mouse type MSi-JM0100-USB*		
In the complete denomination, the asterisk is replaced by alphanumeric or symbolic characters without relevance for explosion protection.		
<b>Description</b>		
The Mouse type MSi-JM0100-USB* is an intrinsically safe apparatus for connection to intrinsically safe interfaces. It is supplied via a permanently connected cable with max. 1.8 m length.		
<b>Parameters</b>		
1 Intrinsically safe power supply and data input in level of protection "Ex ia IIC"		
Wires (1,2,3)-4		
Max. input voltage	UI	DC 5.9 V
Max. input current	Ii	2.7 A
Max. internal capacitance	CI	38 µF
Max. internal inductance	LI	0.9 µH
The maximum internal capacitance and inductance respect a length of 1.8 m for the permanently connected cable.		
Max. output voltage	Uo	5.9 V <sup>1)</sup>
Max. output current	Io	2.7 V <sup>2)</sup>
} <sup>1)</sup> Uo identical with UI		
} <sup>2)</sup> Io identical with Ii		
2 Ambient temperature range	Ta	20 °C ... +50 °C
<b>CONDITIONS OF CERTIFICATION: NO</b>		



## 16 Release notes

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

### Version 01.00.00

- First edition, for approval

### Version 01.00.01

- Including all relevant information from approval
- Including mechanical drawings
- Including declaration of EC conformity
- Including certificates
- Addition of technical data
- Text and layout corrections

### Version 01.00.02

- Change of address
- Changes to section "Disclaimer"
- Addition of Warning "High Temperature" in section "Warnings"
- Changing Conformity to standards
- Adaption section "RoHS directive" with device conformity
- Renew declaration of EC conformity
- Text and layout corrections

### Version 01.00.03

- Addition of section "Specific markings"
- Changing of all markings according to the new definition
- Correction IECEx marking
- Correction ATEX certificat number
- Correction WEEE directive
- Text and layout corrections

### Version 01.00.04

- Adaption of section "Disposal" according to the current WEEE directive
- Formal changes





R. STAHL HMI Systems GmbH  
Adolf-Grimme-Allee 8  
D 50829 Köln

Phone: (switchboard) +49 (0) 221 76 806 - 1000  
(hotline) - 5000  
Fax: - 4100  
E-mail: (switchboard) office@stahl-hmi.de  
(hotline) support@stahl-hmi.de

[www.stahl.de](http://www.stahl.de)  
[www.stahl-hmi.de](http://www.stahl-hmi.de)

