IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx BAS 12.0133X issue No.:4	Certificate history: Issue No. 4 (2016-3-22) Issue No. 3 (2015-1-9) Issue No. 2 (2013-11-25) Issue No. 1 (2013-5-8) Issue No. 0 (2013-1-10)
Status:	**Current**	
Date of Issue:	**2016-03-22**	Page 1 of 4
Applicant:	**ifm electronic GmbH** Friedrichstrasse 1 45128 Essen **Germany**	
Electrical Apparatus: *Optional accessory:*	**The VSP01A Accelerometer**	
Type of Protection:	**Intrinsic Safety**	
Marking:	**Ex ia IIC T4 Ga (-55°C ≤ Ta ≤ +90°C)** **Ex ia IIIC T110°C IP65 Da (-55°C ≤ Ta ≤ +90°C)** **Ex ia IIC T6 Ga (-55°C ≤ Ta ≤ +60°C)** **Ex ia IIIC T80°C IP65 Da (-55°C ≤ Ta ≤ +60°C)**	
Approved for issue on behalf of the IECEx Certification Body:	R S Sinclair	
Position:	Technical Manager	
Signature: *(for printed version)*		
Date:	22 MARCH 2016	

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:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton
Derbyshire
SK17 9RZ
United Kingdom

IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0133X

Date of Issue: **2016-03-22** Issue No.: **4**

Manufacturer: **ifm electronic GmbH**
ifm-Strasse 1
88069 Tettnang
Germany

Additional Manufacturing location (s):

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 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:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*This Certificate **does not** indicate compliance with electrical 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:
GB/BAS/ExTR12.0319/00 GB/BAS/ExTR13.0102/00 GB/BAS/ExTR13.0280/00
GB/BAS/ExTR16.0099/00

Quality Assessment Report:

DE/BVS/QAR06.0010/06

IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0133X

Date of Issue: **2016-03-22** Issue No.: **4**

Schedule

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

The VSP01A Accelerometer is designed to measure acceleration, shock or vibration by converting the signal generated by the compression of a piezo electric crystal by a given seismic mass and outputting a broadband ac signal to the monitoring equipment.

The accelerometer comprises a piezo electric crystal connected to a signal conditioning board, all contained within a stainless steel enclosure of various shapes measuring approximately 25cm^3. The enclosure is a fully welded construction.

Electrical connections are made to the apparatus either via an IP65 rated connector or via an integral cable which is encapsulated in the end of the apparatus.

The apparatus has the following terminal parameters:

Connector only	
Ui =	28V
Ii =	93mA
Pi =	0.65W
Ci =	1.0nF
Li =	negligible

10m of Cable			
Ui =	28V		
Ii =	93mA		
Pi =	0.65W		
Ci =	9.9nF		
Li =	7µH	or Li/Ri =	15.4µH/Ω

92m of Cable	
Ui =	28V
Ii =	93mA
Pi =	0.65W
Ci =	83nF
Li/Ri =	15.4µH/Ω

CONDITIONS OF CERTIFICATION: YES as shown below:

1. The free end of the cable on the integral cable version of the equipment must be terminated in an appropriately certified dust proof enclosure when dust protection is required.

IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0133X

Date of Issue: **2016-03-22** Issue No.: **4**

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 4.1

To permit the use of an alternative cable type and the use of an alternative catalyst with the encapsulant.

ExTR: **GB/BAS/ExTR16.0099/00** File Reference: **16/0137**

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx BAS 12.0133X issue No.:3	Certificate history: Issue No. 3 (2015-1-9) Issue No. 2 (2013-11-25) Issue No. 1 (2013-5-8) Issue No. 0 (2013-1-10)
Status:	**Current**	
Date of Issue:	**2015-01-09** Page 1 of 4	

Applicant: **ifm electronic GmbH**
Friedrichstrasse 1
45128 Essen
Germany

Electrical Apparatus: **The VSP01A Accelerometer**
Optional accessory:

Type of Protection: **Intrinsic Safety**

Marking: **Ex ia IIC T4 Ga (-55°C ≤Ta ≤+90°C)**
Ex ia IIIC T110°C IP65 Da (-55°C ≤Ta ≤+90°C)
Ex ia IIC T6 Ga (-55°C ≤Ta ≤+60°C)
Ex ia IIIC T80°C IP65 Da (-55°C ≤Ta ≤+60°C)

Approved for issue on behalf of the IECEx Certification Body: R S Sinclair

Position: General Manager

Signature:
(for printed version)

Date: 12/1/2015

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:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton
Derbyshire
SK17 9RZ
United Kingdom

IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0133X

Date of Issue: **2015-01-09** Issue No.: **3**

Manufacturer: **ifm electronic GmbH**
ifm-Strasse 1
88069 Tettnang
Germany

Additional Manufacturing location (s):

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 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:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*This Certificate **does not** indicate compliance with electrical 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:
GB/BAS/ExTR12.0319/00 GB/BAS/ExTR13.0102/00 GB/BAS/ExTR13.0280/00

Quality Assessment Report:

DE/BVS/QAR06.0010/04

IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0133X

Date of Issue: **2015-01-09** Issue No.: **3**

Schedule

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

The VSP01A Accelerometer is designed to measure acceleration, shock or vibration by converting the signal generated by the compression of a piezo electric crystal by a given seismic mass and outputting a broadband ac signal to the monitoring equipment.

The accelerometer comprises a piezo electric crystal connected to a signal conditioning board, all contained within a stainless steel enclosure of various shapes measuring approximately 25cm^3. The enclosure is a fully welded construction.

Electrical connections are made to the apparatus either via an IP65 rated connector or via an integral cable which is encapsulated in the end of the apparatus.

The apparatus has the following terminal parameters:

Connector only	
Ui =	28V
Ii =	93mA
Pi =	0.65W
Ci =	1.0nF
Li =	negligible

10m of Cable			
Ui =	28V		
Ii =	93mA		
Pi =	0.65W		
Ci =	9.9nF		
Li =	6µH	or Li/Ri =	15.4µH/Ω

92m of Cable	
Ui =	28V
Ii =	93mA
Pi =	0.65W
Ci =	83nF
Li/Ri =	15.4µH/Ω

CONDITIONS OF CERTIFICATION: YES as shown below:

1. The free end of the cable on the integral cable version of the equipment must be terminated in an appropriately certified dust proof enclosure when dust protection is required.

IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0133X

Date of Issue: **2015-01-09** Issue No.: **3**

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 3.1

To permit additional terminal parameters to be added for connector only variants (no cable included).

ExTR: **None required** File Reference: **14/1001**

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx BAS 12.0133X	Issue No: 2	Certificate history:
Status:	Current	Page 1 of 4	Issue No. 2 (2013-11-25)
Date of Issue:	2013-11-25		Issue No. 1 (2013-05-08)
			Issue No. 0 (2013-01-10)

Applicant: **ifm electronic GmbH**
Friedrichstrasse 1
45128 Essen
Germany

Electrical Apparatus: **The VSP01A Accelerometer**
Optional accessory:

Type of Protection: **Intrinsic Safety**

Marking: **Ex ia IIC T4 Ga (-55°C ≤ Ta ≤ +90°C)**
Ex ia IIIC T110°C IP65 Da (-55°C ≤ Ta ≤ +90°C)
Ex ia IIC T6 Ga (-55°C ≤ Ta ≤ +60°C)
Ex ia IIIC T80°C IP65 Da (-55°C ≤ Ta ≤ +60°C)

Approved for issue on behalf of the IECEx Certification Body: R S Sinclair

Position: General Manager

Signature:
(for printed version)

Date: 26-11-13

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:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton
Derbyshire
SK17 9RZ
United Kingdom

IECEx Certificate of Conformity

Certificate No: IECEx BAS 12.0133X Issue No: 2

Date of Issue: 2013-11-25 Page 2 of 4

Manufacturer: **ifm electronic GmbH**
ifm-Strasse 1
88069 Tettnang
Germany

Additional Manufacturing location(s):

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 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:

IEC 60079-0 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*This Certificate **does not** indicate compliance with electrical 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:

GB/BAS/ExTR12.0319/00 GB/BAS/ExTR13.0102/00 GB/BAS/ExTR13.0280/00

Quality Assessment Report:

DE/BVS/QAR06.0010/04

IECEx Certificate of Conformity

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The VSP01A Accelerometer is designed to measure acceleration, shock or vibration by converting the signal generated by the compression of a piezo electric crystal by a given seismic mass and outputting a broadband ac signal to the monitoring equipment.

The accelerometer comprises a piezo electric crystal connected to a signal conditioning board, all contained within a stainless steel enclosure of various shapes measuring approximately 25cm^3. The enclosure is a fully welded construction.

Electrical connections are made to the apparatus either via an IP65 rated connector or via an integral cable which is encapsulated in the end of the apparatus.

The apparatus has the following terminal parameters:

With 92m of integral cable			With 10m of integral cable				
U_i	= 28V		U_i	= 28V			
I_i	= 93mA		I_i	= 93mA			
P_i	= 0.65W		P_i	= 0.65W			
C_i	= 83nF		C_i	= 9.9nF			
L_i/R_i	= 15.4µH/Ω		L_i/R_i	= 15.4µH/Ω	OR	Li	= 6µH

CONDITIONS OF CERTIFICATION: YES as shown below:

1. The free end of the cable on the integral cable version of the equipment must be terminated in an appropriately certified dust proof enclosure when dust protection is required.

IECEx Certificate of Conformity

Certificate No:	IECEx BAS 12.0133X	Issue No: 2
Date of Issue:	2013-11-25	Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 2.1

To permit the maximum operating ambient temperature range to be reduced from 110°C to 90°C.

ExTR: **GB/BAS/ExTR13.0280/00**	File Reference: **13/0954**

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx BAS 12.0133X issue No.:1

Certificate history:
Issue No. 1 (2013-5-8)
Issue No. 0 (2013-1-10)

Status: **Current**

Date of Issue: **2013-05-08** Page 1 of 4

Applicant: **ifm electronic GmbH**
Friedrichstrasse 1
45128 Essen
Germany

Electrical Apparatus: **The VSP01A Accelerometer**
Optional accessory:

Type of Protection: **Intrinsic Safety**

Marking: **Ex ia IIC T4 Ga (-55°C ≤Ta ≤+110°C)**
Ex ia IIIC T130°C IP65 Da (-55°C ≤Ta ≤+110°C)

or

Ex ia IIC T6 Ga (-55°C ≤Ta ≤+60°C)
Ex ia IIIC T80°C IP65 Da (-55°C ≤Ta ≤+60°C)

Approved for issue on behalf of the IECEx Certification Body: R S Sinclair

Position: General Manager

Signature:
(for printed version)

Date: 8-5-13

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:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton
Derbyshire
SK17 9RZ
United Kingdom

IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0133X

Date of Issue: **2013-05-08** Issue No.: **1**

Manufacturer: **ifm electronic GmbH**
ifm-Strasse 1
88069 Tettnang
Germany

Additional Manufacturing location (s):

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 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:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements
Edition: 6.0

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

*This Certificate **does not** indicate compliance with electrical 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:
GB/BAS/ExTR12.0319/00 GB/BAS/ExTR13.0102/00

Quality Assessment Report:

DE/BVS/QAR06.0010/04

IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0133X

Date of Issue: **2013-05-08** Issue No.: **1**

Schedule

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

The VSP01A Accelerometer is designed to measure acceleration, shock or vibration by converting the signal generated by the compression of a piezo electric crystal by a given seismic mass and outputting a broadband ac signal to the monitoring equipment.

The accelerometer comprises a piezo electric crystal connected to a signal conditioning board, all contained within a stainless steel enclosure of various shapes measuring approximately $25cm^3$. The enclosure is a fully welded construction.

Electrical connections are made to the apparatus either via an IP65 rated connector or via an integral cable which is encapsulated in the end of the apparatus.

The apparatus has the following terminal parameters:

With 92m of integral cable		With 10m of integral cable			
U_i	= 28V	U_i	= 28V		
I_i	= 93mA	I_i	= 93mA		
P_i	= 0.65W	P_i	= 0.65W		
C_i	= 83nF	C_i	= 9.9nF		
L_i/R_i	= 15.4µH/Ω	L_i/R_i	= 15.4µH/Ω	OR Li	= 6µH

CONDITIONS OF CERTIFICATION: YES as shown below:

1. The free end of the cable on the integral cable version of the equipment must be terminated in an appropriately certified dust proof enclosure when dust protection is required.

IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0133X

Date of Issue: **2013-05-08** Issue No.: **1**

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 1.1

To permit the accelerometer to be supplied with 10m of cable with a resultant change to the entity parameters.

ExTR: **GB/BAS/ExTR13.0102/00** File Reference: **13/0342**

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx BAS 12.0133X issue No.:0	Certificate history:
Status:	**Current**	
Date of Issue:	**2013-01-10**	Page 1 of 3

Applicant: **ifm electronic GmbH**
Friedrichstrasse 1
45128 Essen
Germany

Electrical Apparatus: **The VSP01A Accelerometer**
Optional accessory:

Type of Protection: **Intrinsic Safety**

Marking: **Ex ia IIC T4 Ga (-55°C ≤Ta ≤+110°C)**
Ex ia IIIC T130°C IP65 Da (-55°C ≤Ta ≤+110°C)

or

Ex ia IIC T6 Ga (-55°C ≤Ta ≤+60°C)
Ex ia IIIC T80°C IP65 Da (-55°C ≤Ta ≤+60°C)

Approved for issue on behalf of the IECEx Certification Body: R S Sinclair PP DBREARLEY

Position: General Manager

Signature:
(for printed version)

Date: 11/1/13

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:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton
Derbyshire
SK17 9RZ
United Kingdom

IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0133X

Date of Issue: **2013-01-10** Issue No.: **0**

Manufacturer: **ifm electronic GmbH**
ifm-Strasse 1
88069 Tettnang
Germany

Additional Manufacturing location (s):

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 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:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*This Certificate **does not** indicate compliance with electrical 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:
GB/BAS/ExTR12.0319/00

Quality Assessment Report:

DE/BVS/QAR06.0010/03

IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0133X

Date of Issue: **2013-01-10** Issue No.: **0**

Schedule

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

The VSP01A Accelerometer is designed to measure acceleration, shock or vibration by converting the signal generated by the compression of a piezo electric crystal by a given seismic mass and outputting a broadband ac signal to the monitoring equipment.

The accelerometer comprises a piezo electric crystal connected to a signal conditioning board, all contained within a stainless steel enclosure of various shapes measuring approximately 25cm^3. The enclosure is a fully welded construction.

Electrical connections are made to the apparatus either via an IP65 rated connector or via an integral cable which is encapsulated in the end of the apparatus.

The apparatus with 92m of integral cable has the following terminal parameters:

U_i = 28V
I_i = 93mA
P_i = 0.65W
C_i = 83nF
L_i/R_i = 15.4µH/Ω

CONDITIONS OF CERTIFICATION: YES as shown below:

1. The free end of the cable on the integral cable version of the equipment must be terminated in an appropriately certified dust proof enclosure when dust protection is required.