Load cells

KXX-X with variants,
(KIS-X, KIS-8X, KIS-9X, KIM-1X)

Intrinsic safety version Ex ia Ga and enclosure Ex ia Da

Information for use of load cells in explosive atmospheres

BLH NOBEL
A VPG Brand

Load cells for use in explosive atmospheres

KXX-X with variants, (KIS-X, KIS-8X, KIS-9X, KIM-1X)

Certificates

Appendix 1

EU-Type Examination Certificate, No. Baseefa02ATEX0073, Issue 8.
200436r4

Appendix 2

UK-Type Examination Certificate, No. BAS22UKEX0267, Issue 0.
200707r0

Appendix 3

200440r6, Declaration of Conformity

Appendix 4

IECEx certificate, link to official IECEx web site.
200498r3

Overload

The load cells must not be exposed to more than the mechanical "overload, ultimate", specified in the data sheet.

Repair

The equipment is not to be repaired by the user, repairs should only be carried out by the manufacturer or approved repairer. The equipment may only be replaced by an equivalent certified unit.

1 # EU - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**
Directive 2014/34/EU

3 EU - Type Examination Certificate Number: **Baseefa02ATEX0073 – Issue 8**

3.1 In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

4 Product: **Load Cell KXX-X with variants**

5 Manufacturer: **Vishay Nobel AB**

6 Address: **Box 423, SE-691 27 Karlskoga, Sweden**

7 This re-issued certificate extends EC Type Examination Certificate No. Baseefa02ATEX0072 to apply to product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8 SGS Fimko Oy, Notified Body number 0598, 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.

8.1 The original certificate was issued by SGS Baseefa Ltd (UK Notified Body 1180). It, and any supplements previously issued by SGS Baseefa Ltd have been transferred to the supervision of SGS Fimko Oy (EU Notified Body 0598). The original certificate number is retained.

The examination and test results are recorded in confidential Report No. **See Certificate History**

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

EN IEC 60079-0:2018 **EN 60079-11:2012**

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:

Ex **II 1 GD** **See schedule**

Ex **I M1** **See schedule**

SGS Fimko Oy Customer Reference No. **2054** Project File No. **22/0544**

SGS Fimko Oy
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FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
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web site www.sgs.fi
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number Baseefa02ATEX0073 – Issue 8

15 Description of Product

The Loadcells Type KXX-X are designed to measure force. Each loadcell comprises a printed circuit board, two dual element strain gauges and two modulus gauges all housed in a stainless steel enclosure. External connections are made via an integral four core cable.

This certificate covers loadcells **KIS-X, KIS-8X, KIS-9X** and **KIM-1X**, where X represents type and load rating.

The apparatus comprises a stainless steel body, in which the strain and modulus gauges and the printed circuit board (coated with silicon rubber compound or varnish) are mounted. Electrical connections are made via a glanded integral cable, the termination of which, on the internal printed circuit board is encapsulated. The loadcells are adequately protected against dust ingress, the enclosures offering a degree of protection of not less than IP6X.

The marking of the equipment depends upon input power and ambient temperature as follows:

Ex ia IIC T6 Ga	Ex ia IIIC T_{500}84°C Da	Ex ia I Ma (-40ºC ≤ Ta ≤ 60ºC)	1.2W (KIS-X only)
Ex ia IIC T4 Ga	Ex ia IIIC T_{500}64°C Da	Ex ia I Ma (-40ºC ≤ Ta ≤ 40ºC)	1.3W
Ex ia IIC T4 Ga	Ex ia IIIC T_{500}84°C Da	Ex ia I Ma (-40ºC ≤ Ta ≤ 60ºC)	1.2W

Input Parameters

U_i	=	30V	C_i	=	2.5nF
I_i	=	700mA	L_i/R_i	=	30µH/Ω
P_i	=	1.2W / 1.3W			

Cable length	Capacitance, C_i	Inductance, L_i	L_i / R_i Ratio
< 10m	3.5nF	10µH	30µH/Ω
>10m to 15m	5nF	15µH	30µH/Ω
>15m to 25m	8nF	25µH	30µH/Ω
>25m to 50m	15nF	Use L_i/R_i ratio	30µH/Ω
>50m to 100m	30nF	Use L_i/R_i ratio	30µH/Ω

16 Report Number

See Certificate History

17 Specific Conditions of Use

None

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 report:

Clause	Subject
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

New drawings submitted for this issue of certificate:

Number	Sheet	Issue	Date	Description
500938	1 of 1	11	2022-10-06	ATEX Label KIS-X
600529	1 of 1	10	2022-10-06	ATEX Label KIS-8X
600530	1 of 1	10	2022-10-06	ATEX Label KIS-9X
600591	1 of 1	10	2022-10-06	ATEX Label KIM-1X

These new drawings are held with IECEx BAS 14.0015X Issue 3, and are common to BAS22UKEX0267 (prime).

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
300275	1 of 1	5	2018-04-24	KIS-8X ATEX
300277	1 of 1	4	2010-09-09	KIS-9X ATEX
300278	1 of 1	4	2010-09-09	KIM-1X ATEX
400689	1 of 1	4	2010-09-09	KIS-X ATEX

All drawings are held with IECEx BAS 14.0015X and are common to BAS22UKEX0267.

20 Certificate History

Certificate No.	Date	Comments
Baseefa02ATEX0073	16 October 2002	The release of the prime certificate. The associated test and assessment is documented in Test Report No. 02(C)0290. Project File No. 02/0290.
Baseefa02ATEX0073/1	4 February 2004 *Reissued 18 November 2005*	To permit a change of company name/logo, minor drawing changes, new input parameters and new cable length options. Project File No. 03/0931
Baseefa02ATEX0073/2	17 November 2005	To permit minor drawing changes. Project File No. 05/0362
Baseefa02ATEX0073/3	25 September 2006 *Reissued 10 May 2007*	To permit a change to the ambient temperatures (to -40°C). Project File No. 06/0310
Baseefa02ATEX0073/4	1 June 2011	To permit minor drawing changes, confirm that the equipment covered by this certificate has been reviewed against the requirements of EN 60079-0:2009 and EN 60079-11:2007 in respect of the differences from EN 50014:1997 + Amds 1 & 2 and EN 50020:2002 and to confirm that the equipment covered by this certificate has been additionally reviewed against the requirements of IEC 60079-31:2008 and may also therefore be coded: **Ⓔx II 1D Ex t IIIC T**°C T_{500}**°C Da** Project File No. 10/0535.

Certificate No.	Date	Comments
Baseefa02ATEX0073 Issue 5	11 November 2014	This issue of the certificate incorporates previously issued primary & supplementary certificates into one certificate and confirms the current design meets the requirements of EN 60079-0: 2012 & EN 60079-11: 2012 including the revision of the marking in accordance with these standards. The equipment has been assessed against the requirements for Group I and may also therefore be additionally coded: **Ⓔx I M1 Ex ia I Ma** Test Report No. GB/BAS/ExTR14.0154/00. Project File No. 13/0709.
Baseefa02ATEX0073 Issue 6	11 June 2018	To permit a change in U_i from 25V to 30V (the parameters have been updated accordingly) and to confirm that the equipment meets the requirements of EN 60079-0: 2012+A11:2013. Test Report No. GB/BAS/ExTR18.0071/00. Project File No. 18/0220.
Baseefa02ATEX0073 Issue 7	8 January 2020	To permit minor drawing changes. Test Report No. GB/BAS/ExTR20.0003/00. Project File No. 19/0211.
Baseefa02ATEX0073 Issue 8	12 April 2023	To confirm the current design meets the requirements of EN IEC 60079-0:2018. Test Report No. GB/BAS/ExTR23.0022/00. Project File No: 22/0544
For drawings applicable to each issue, see original of that issue.		

Certificate Number
BAS22UKEX0267

Issued 12 April 2023

1 # UK-TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**
UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

3 UK-Type Examination Certificate Number: **BAS22UKEX0267**

4 Product: **Load Cell KXX-X with variants**

5 Manufacturer: **Vishay Nobel AB**

6 Address: **Box 423, SE-691 27 Karlskoga, Sweden**

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 SGS Baseefa, Approved Body number 1180, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), 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 Schedule 1 of the Regulations.

The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR23.0022/00**

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

EN IEC 60079-0:2018 EN 60079-11:2012

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 UK-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations 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:

Ex **II 1 GD See Schedule**

Ex **I M1 See Schedule**

SGS Baseefa Customer Reference No. **2054** Project File No. **22/0544**

SGS Baseefa Limited
Rockhead Business Park, Staden Lane,
Buxton, Derbyshire SK17 9RZ
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601
e-mail baseefa@sgs.com web site www.sgs.co.uk/sgsbaseefa
Registered in England No. 4305578.
Registered address: Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN

UKAS PRODUCT CERTIFICATION
0191

R S SINCLAIR
TECHNICAL MANAGER
On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number BAS22UKEX0267**

15 Description of Product

The Loadcells Type KXX-X are designed to measure force. Each loadcell comprises a printed circuit board, two dual element strain gauges and two modulus gauges all housed in a stainless steel enclosure. External connections are made via an integral four core cable.

This certificate covers loadcells KIS-X, KIS-8X, KIS-9X and KIM-1X, where X represents type and load rating.

The apparatus comprises a stainless steel body, in which the strain and modulus gauges and the printed circuit board (coated with silicon rubber compound or varnish) are mounted. Electrical connections are made via a glanded integral cable, the termination of which, on the internal printed circuit board is encapsulated. The loadcells are adequately protected against dust ingress, the enclosures offering a degree of protection of not less than IP6X.

The marking of the equipment depends upon input power and ambient temperature as follows:

Ex ia IIC T6 Ga	Ex ia IIIC T_{500}84°C Da	Ex ia I Ma (-40°C ≤ Ta ≤ 60°C)	1.2W (KIS-X only)
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Ex ia IIC T4 Ga	Ex ia IIIC T_{500}84°C Da	Ex ia I Ma (-40°C ≤ Ta ≤ 60°C)	1.2W

Input Parameters

U_i	=	30V	C_i	=	2.5nF
I_i	=	700mA	L_i/R_i	=	30µH/Ω
P_i	=	1.2W / 1.3W			

Cable length	Capacitance, C_i	Inductance, L_i	L_i / R_i Ratio
< 10m	3.5nF	10µH	30µH/Ω
>10m to 15m	5nF	15µH	30µH/Ω
>15m to 25m	8nF	25µH	30µH/Ω
>25m to 50m	15nF	Use L_i/R_i ratio	30µH/Ω
>50m to 100m	30nF	Use L_i/R_i ratio	30µH/Ω

16 Report Number

GB/BAS/ExTR23.0022/00

17 Specific Conditions of Use

None

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 report:

Clause	Subject
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
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19 Drawings and Documents

New drawings submitted for this issue of certificate:

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600591	1 of 1	10	2022-10-06	ATEX Label KIM-1X

Refer to Baseefa02ATEX0073 Issue 8 for the full list of applicable drawings.

Appendix 3, 200440r6, Declaration of Conformity

Declaration of Conformity

We Vishay Nobel AB
P.O. Box 423, SE-691 27 KARLSKOGA
Skrantahöjdsvägen 40, SE-69146 KARLSKOGA
SWEDEN

declare under our sole responsibility that the products

Load Cell KXX-X with variants
(KIS-X, KIS-8X, KIS-9X, KIM-1X)

to which this declaration relates are in conformity with the following standards or other normative documents.

The essential requirements in the ATEX Directive 2014/34/EU with later amendments

EN IEC 60079-0: 2018
EN 60079-11: 2012

Group II Category 1 G, Ex ia IIC T* Ga
Group II Category 1 D, Ex ia IIIC T_{500}*°C Da
Group I Category M1, Ex ia I Ma

*) See Certificate for values.

EC – Type examination Certificate: Baseefa02ATEX0073
IEC – Type examination Certificate: IECEx BAS 14.0015X
UKCA – Type Certificate: BAS22UKEX0267

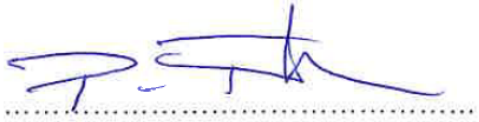
Notified body for EC type Examination: SGS Fimko Oy, NB No. 0598, Helsinki FINLAND
Notified Body for production: SGS Fimko Oy, NB No. 0598, Helsinki FINLAND
Notified Body for UKCA production: SGS Baseefa Limited, NB No. 1180, Buxton UK

The essential requirements in the RoHS Directive 2011/65/EU Restriction of the use of certain hazardous substances in electrical and electronic equipment.
EN 50581:2012

The product is supplied by Ui = 30 V and is therefore not covered by the requirements in the Low Voltage Directive 2014/35/EU.

On behalf of the above named company, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives.

KARLSKOGA, 19th of June 2023



Per Fredriksson, Managing Director

Publication 200440R07
Vishay Nobel AB

Appendix 4, 200498r3, IECEx Certificate

IECEx Certificate

The IECEx certificate for the KXX-X with variants, (KIS-X, KIS-8X, KIS-9X, KIM-1X) load cells can be found on the official IECEx web site: https://www.iecex.com/

Certificate number: IECEx BAS 14.0015X Issue No. 3.

Publication 600623R11

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