Translation

(1) # 1st Supplement to the EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC
Supplement accordant with Annex III number 6

(3) No. of EC-Type Examination Certificate: **BVS 10 ATEX E 156**

(4) Equipment: **Load cell type 0113-*****

(5) Manufacturer: **Brosa AG**

(6) Address: **Dr. Klein Straße 1, 88069 Tettnang, Germany**

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

(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 11.2001 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2012 **General requirements**
EN 60079-1:2007 **Flameproof enclosure "d"**

(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 supplement to the 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:

II 2G Ex d IIC T4 Gb
II 2G Ex d IIB T4 Gb
The gas group (IIB/IIC) depends on the chosen entry technique. See *Description* for details

DEKRA EXAM GmbH
Bochum, dated 2015-03-03

Signed: Simanski
Certification body

Signed: Dr. Wittler
Special services unit

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

(13) Appendix to

(14) **1st Supplement to the EC-Type Examination Certificate BVS 10 ATEX E 156**

(15) 15.1 Subject and type

Load cell type 0113-*****

5-digit number only relevant for order handling, not for explosion protection

15.2 Description

The load cell type 0113-***** is designed in type of protection Flameproof Enclosure "d" for use in areas endangered by combustible gas atmosphere.
The main part of the load cell is a massive metal block with five blind holes. The center hole is used to mount the optional measuring transmitter inside. The four other holes are used for the DMSs. All holes are connected to each other via ducts. The blind holes are closed with lids fixed in position by a thread or by snap rings.

The electrical connection is realised by use of a connection head fixed to the center blind hole.

The load cell can be used with separately certified cable glands or alternatively with separately certified plug/socket systems. In case of separately certified cable glands, the cable glands are designed with filling compound for use in gas group IIC and with sealing ring for use in gas group IIB.

15.3 Parameters

Electrical parameters (active operation mode)

Input voltage U_{In}	DC	9 up to 36	V
Input current I_{In}		5 up to 100	mA
Output voltage U_{Out}	DC	0 up to 10	V
Output current I_{Out}		0 up to 25	mA

Electrical parameters (passive operation mode)

Input voltage U_{In}	DC	1 up to 10	V
Input current I_{In}		3 up to 30	mA

Thermal parameters

Ambient temperature range	$-40\ °C \leq T_a \leq +80\ °C$

(16) Test and Assessment Report

BVS PP 11.2001 EG as of 2015-03-03

(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, 2015-03-03
BVS-Kir/Ma A 20150014

Certification body

Special services unit

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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 10 ATEX E 156**

(4) Equipment: **Tension load cell type 0113-*****

(5) Manufacturer: **Brosa AG**

(6) Address: **88069 Tettnang, 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 11.2001 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2009 General requirements
EN 60079-1:2007 Flameproof enclosure

(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:

II 2G Ex d IIC T4 Gb
II 2G Ex d IIB T4 Gb

DEKRA EXAM GmbH
Bochum, dated 03. January 2011

Signed: Dr. Eickhoff
Certification body

Signed: Dr. Wittler
Special services unit

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Phone +49.234.3696-105 Fax +49.234.3696-110 zs-exam@dekra.com

(13) Appendix to

(14) **EC-Type Examination Certificate**
BVS 10 ATEX E 156

(15) 15.1 Subject and type

Tension load cell type 0113-*****[1)]

[1)] 5-digit number only relevant for order handling, not for explosion protection

15.2 Description

The tension load cell type 0113 is a measuring device used by the industry to record loads and forces in Ex-atmospheres.

The load/force is determined by means of a DMS bridge which is placed on a deformation body; the bridge signal is amplified by an integrated device and converted into an output signal.

The tension load cell is made of fine grain steel, and its built-on components are made of machining/tempering steel, in special cases a variant of high-strength stainless steel is possible, too. The tension load cells are manufactured for the two following gas groups:

1) for group IIC

2) for group IIB

The difference lies in the cable glands used which are chosen according to Fig. 2 of EN 60079-14:2008, for equipment with a free inner volume of less than 2 dm³ for the respective gas group.

For group IIB a separately certified cable gland is used.
For group IIC such a separately certified cable gland is used that seals the entry with a compound surrounding the single strands of wire which is necessary as this provides a direct entry in a flameproof enclosure of gas group IIC with sources of ignition inside.

15.3 Parameters

15.3.1 Electrical parameters

Input voltage U_{In}	DC	9 – 36 V
Input current I_{In}		18 – 43 mA
Output voltage U_{Out}	DC	0 – 10 V
Output current I_{Out}		4 – 20 mA

15.3.2 Thermal parameters

Ambient temperature range	$-40\ °C \leq T_a \leq +80\ °C$

(16) Test and assessment report

BVS PP 11.2001 EG as of 03.01.2011

(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, 07.02.2011
BVS-Kr/Ar A 20110041

Certification body

Special services unit

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