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 09 ATEX E 037 X**

(4) Equipment: **Load pin type 0203-*****

(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 09.2039 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
or
II 2G Ex d IIB T4 Gb

DEKRA EXAM GmbH
Bochum, dated 2014-09-03

Signed: Simanski
Certification body

Signed: Dr. Wittler
Special services unit

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DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +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 09 ATEX E 037 X**

(15) 15.1 Subject and type

Load pin type 0203-*****

The asterisks are not relevant for explosion protection

15.2 Description

The load pin consists of a cylindrical enclosure made of steel and an electronic built into this enclosure. The bridge signal will be amplified by an integrated amplifier and converted into an output signal. Optionally the load pin can be design as passive variant without the integrated amplifier.

The load pin can be designed in different lengths and diameters and with or without separated amplifier enclosure.

Optional the load pin can be designed as single- or dual-channel measuring equipment.

The amplifier housing for single-channel or redundant measuring can be designed in two ways. On the one hand the amplifier housing can be integrated into housing or on the other hand it can be screwed onto the housing of the load pin. The option for the mounting depends on the geometry of the load pin.

The load pin is suitable for use in gas group IIC or IIB.

For use in gas group IIB a separately tested and certified cable gland will be used.

For use in gas group IIC a separately tested and certified cable gland with potting compound will be used.

Reasons for this supplement are:

- Update of the standard EN 60079-0:2006 to EN 60079-0:2012
- Optionally the load pin can now be used as passive variant without integrated amplifier
- The input current of the active variant has been changed
- Optional change of the housing material from stainless steel to non-stainless steel with equivalent strength
- Optional use of a separately certified plug / socket system instead of the cable gland

15.3 Parameters

Electrical parameters

Active variant (with integrated amplifier)		
Input voltage	DC	9 up to 36 V
Input current		5 up to 100 mA
Output voltage	DC	0 up to 10 V
Output current		4 up to 20 mA

Passive variant (without integrated amplifier)		
Input voltage	DC	1 up to 10 V
Input current		3 up to 30 mA

Thermal parameters

Ambient temperature range $-40\ °C \leq T_{amb} \leq 80\ °C$

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(16) Test and Assessment Report

BVS PP 09.20379 EG as of 2014-09-03

(17) Special conditions for safe use

The free end of the connecting cable has to be either laid within an appropriate enclosure – inside the potentially explosive atmosphere – or outside the potentially explosive atmosphere.

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, 2014-09-03
BVS-Kir/Ma A20131146

Certification body

Special services unit

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Translation

(1) # EC-Type Examination Certificate

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

(3) # BVS 09 ATEX E 037 X

(4) **Equipment:** **Shaft power meters type 0203-XXXXX**

(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 09.2039 EG.

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

EN 60079-0:2006 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 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
II 2G Ex d IIB T4

DEKRA EXAM GmbH
Bochum, dated 30. March 2009

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

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(13) Appendix to

(14) # EC-Type Examination Certificate

BVS 09 ATEX E 037 X

(15) 15.1 Subject and type

Shaft power meters type 0203-XXXXX

The type consists of the type labelling 0203 and a five-digit marking that defines the customised marking of each offer.

15.2 Description

The shaft power meters (SPM) consist of a cylindrical steel enclosure with electronics mounted inside. They serve the purpose of recording loads and powers in the industry. The load/power is determined by means of a DMS-bridge. The bridge signal is amplified by a not intrinsically safe supplied apparatus that is usually not integrated and then it is converted into an output signal.

The shaft power meters can be manufactured at different lengths and diameters and with or without an enclosure for the amplifier. The SPM can also be manufactured as a one-channel or two-channel measuring device.

For one-channel measuring and redundant measuring > 100 mm the amplifier enclosure is integrated into the SPM. A second concept sees the amplifier enclosure being screwed on top of the SPM.

Subject of this test and assessment report is the test of a type series of SPM with a free inside enclosure volume of $< 100\ cm^3$.

The shaft power meters are manufactured for two groups of gases:

1) for Group IIC
2) for Group IIB

The difference between the types lies in the cable entry used. The type is selected according to EN 60079-14:2003, Fig. 1, for apparatus of less than 2 dm^3 free inside volume for the gas group given.

For Group IIB a cable entry is used which is separately certified.

For Group IIB a cable entry is used which is separately certified and which seals the entry by a compound surrounding the single wires. This sealing is necessary as here we have a direct entry into a flameproof enclosure of gas Group IIC with sources of internal ignition.

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15.3 Parameters

Input voltage	DC	9 – 36	V
Input current		18 – 43	mA
Output voltage		0 – 10	V
Output current		4 – 20	mA
Ambient temperature range		-40 °C ≤ Ta≤ +80 °C	

(16) Test and assessment report

BVS PP 09.2039 EG as of 30.03.2009

(17) Special conditions for safe use

The free end of the connecting cable has to be either laid within an appropriate enclosure – inside the potentially explosive atmosphere – or outside the potentially explosive atmosphere.

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.

44809 Bochum, 20.04.2009
BVS-Kem/Ar A 20080217

DEKRA EXAM GmbH

Certification body

Special services unit

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