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 066 X**

(4) Equipment: **Junction Box type S47k**

(5) Manufacturer: **MSA AUER GmbH**

(6) Address: **12059 Berlin, 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 10.2154 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**
EN 60079-7:2007	**Increased safety**
EN 61241-0:2006	**General requirements**
EN 61241-1:2004	**Protection by enclosures**

(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 T6 or T4
II 2D Ex tD A21 IP6x T85°C or T135°C or

II 2G Ex e IIC T6 or T4
II 2D Ex tD A21 IP6x T85°C or T135°C

DEKRA EXAM GmbH
Bochum, dated 28th May 2010

Signed: Simanski
Certification body

Signed: Ruhnau
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 066 X

(15) 15.1 Subject and type

Junction Box type S47k

15.2 Description

The junction box type S47k consists of an aluminium enclosure and is suitable for use in gas and dust hazardous atmospheres of categories 2G and 2D.

The junction box type S47k is equipped as follows: either with a conical NPT-connection for the type of protection 'd', Flameproof Enclosure, together with 'tD', Protection by Enclosures; or with a metric connection thread for attaching cable glands separately certified for this purpose for the type of protection 'e', Increased Safety, together with 'tD', Protection by Enclosures; or with the sensor type S47k according to the EC-Type Examination Certificate INERIS 03 ATEX0208 and its pertinent supplements no. 1-4. Only the manufactured variant is marked on the apparatus.

When manufactured for the type of protection 'e', Increased Safety, the junction box type S47k is also equipped with terminals certified according to an EC-Type Examination Certificate, and another variant is also equipped with a separately certified annex switch at the metric connection thread.

15.3 Parameters

15.3.1 Electrical parameters

Current (constant power supply)		310 mA
Power	max.	1.92 W

15.3.2 Thermal parameters

Ambient temperature range	-40 °C ≤ Ta ≤ +40 °C
Temperature class	T6
Maximum surface temperature	≤ 85 °C
Ambient temperature range	-40 °C ≤ Ta ≤ +70 °C
Temperature class	T4
Maximum surface temperature	≤ 135 °C
Ambient temperature range with push button type Taste22 ds87V-5322	-20 °C ≤ Ta ≤ +40 °C
Temperature class	T6
Maximum surface temperature	≤ 85 °C
Ambient temperature range with push button type Taste22 ds87V-5322	-20 °C ≤ Ta ≤ +50 °C
Temperature class	T4
Maximum surface temperature	≤ 135 °C

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

(16) Test and assessment report

BVS PP 10.2154 EG as of 28.05.2010

(17) Special conditions for safe use

The connection of the junction box type S47k to a control unit with measuring function for explosion protection according to DIN EN 61 779-1 and DIN EN 61 779-4 is not subject of this EC-Type Examination Certificate.

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, 19.10.2011
BVS-Ld/Ar E 1592/11

Certification body

Special services unit

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

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 066 X**

(4) Equipment: **Junction Box type S47k**
Junction Box type X series AL junction box

(5) Manufacturer: **MSA AUER GmbH**

(6) Address: **12059 Berlin, 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 10.2154 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**
EN 60079-7:2007	**Increased safety**
EN 61241-0:2006	**General requirements**
EN 61241-1:2004	**Protection by 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 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 T6 or T4
II 2D Ex tD A21 IP6x T85°C or T135°C
or
II 2G Ex e IIC T6 or T4
II 2D Ex tD A21 IP6x T85°C or T135°C

DEKRA EXAM GmbH
Bochum, dated 23rd September 2011

Signed: Simanski
Certification body

Signed: Dr. Eickhoff
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) **1st Supplement to the EC-Type Examination Certificate BVS 10 ATEX E 066 X**

(15) 15.1 Subject and type

Junction Box type S47k
Junction Box type X Series AL Junction Box

15.2 Description

The **junction box type S47K** can now also be used in conjunction with the sensor **infrared gas monitor type PrimaX IR** according to the EC-Type Examination Certificate BVS 10 ATEX E 157 X; then, it will be labelled as type **X series AL junction box**.

The variants not featuring a push button can also be used in conjunction with a cable gland type HSK-M-Ex-d for an ambient temperature range from -50°C to +80°C.

There are no modifications for the junction box type S47K with push button.

The variants for the type of protection d, Flameproof Enclosure, were tested applying four times the reference pressure defined for the new ambient temperature range from -50°C to +80°C. Thus the test for resistance to pressure according to 16.1.1 of EN60079-1 is not necessary.

The **junction box type X series AL junction box** is equipped as follows: either with conical NPT-connections for the type of protection 'd', Flameproof Enclosure; or with metric connection threads for attaching cable glands separately certified for this purpose for the type of protection 'e', Increased Safety; and/or for attaching the sensor **infrared gas monitor type PrimaX IR** according to the EC-Type Examination Certificate BVS 10 ATEX E 157 X. Only the manufactured variant is marked on the apparatus. The applicable ambient temperature range depends on the cable gland used.

15.3 Parameters

15.3.1 **Electrical parameters**

Current (constant power supply)		310	mA
Power	max.	1.92	W

15.3.2 **Thermal parameters for junction box type S47k**

Ambient temperature range with cable gland	
Type HSK-M-Ex-d (NPT and metric thread)	$-50°C \leq T_a \leq +40°C$
Temperature class	T6
Maximum surface temperature	≤ 85°C
Ambient temperature range with cable gland	
type HSK-M-Ex-d (NPT and metric thread)	$-50°C \leq T_a \leq +80°C$
Temperature class	T4
Maximum surface temperature	≤ 135°C
Ambient temperature range with cable gland	
type 8161/5-M25-17	$-40°C \leq T_a \leq +40°C$
Temperature class	T6
Maximum surface temperature	≤ 85°C
Ambient temperature range with cable gland	
type 8161/5-M25-17	$-40°C \leq T_a \leq +70°C$
Temperature class	T4
Maximum surface temperature	≤ 135°C

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

15.3.3 **Thermal parameters for junction box type S47k with push button**

Ambient temperature range with push button type Taste22 ds87V-5322	$-20°C \leq T_a \leq +40°C$
Temperature class	T6
Maximum surface temperature	≤ 85°C
Ambient temperature range with push button type Taste22 ds87V-5322	$-20°C \leq T_a \leq +50°C$
Temperature class	T4
Maximum surface temperature	≤ 135°C

15.3.4 **Thermal parameters for junction box type X series AL junction box**

Ambient temperature range with cable gland type HSK-M-Ex-d (NPT and metric thread)	$-50°C \leq T_a \leq +40°C$
temperature class	T6
maximum surface temperature	≤ 85°C
Ambient temperature range with cable gland type HSK-M-Ex-d (NPT and metric thread)	$-50°C \leq T_a \leq +80°C$
Temperature class	T4
Maximum surface temperature	≤ 135°C
Ambient temperature range with cable gland type 8161/5-M25-17	$-40°C \leq T_a \leq +40°C$
Temperature class	T6
Maximum surface temperature	≤ 85°C
Ambient temperature range with cable gland type 8161/5-M25-17	$-40°C \leq T_a \leq +70°C$
Temperature class	T4
Maximum surface temperature	≤ 135°C

(16) Test and assessment report

BVS PP 10.2154 EG as of 23.09.2011

(17) Special conditions for safe use

The measuring function for explosion protection is not subject of this EC-Type Examination Certificate.

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, 19.10.2011
BVS-Ld/Ar E 1592/11

Certification body

Special services unit

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

Translation

(1) 2nd 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 066 X**

(4) Equipment : **Junction Box type S47k and X Serie AL Junction Box**

(5) Manufacturer: **MSA EUROPE GmbH**

(6) Address: **Schlüsselstraße 12, 8645 Rapperswil-Jona, Switzerland**

(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 10.2154 EG.

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

EN 60079-0:2012 + A11:2013	**General requirements**
EN 60079-1:2014	**Flameproof enclosure "d"**
EN 60079-7:2007	**Increased safety "e"**
EN 60079-31:2014	**Protection by enclosure "t"**

(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 db IIC T6 or T4 Gb,
II 2D Ex tb IIIB T 85°C or T 135°C Db,
II 2G Ex e IIC T6 or T4 Gb,
II 2D Ex tb IIIB T 85°C or T 135°C Db,
alternativ

II 2G Ex db IIC T6 or T4,
II 2D Ex tb IIIB T 85°C or T 135°C,
II 2G Ex eb IIC T6 or T4,
II 2D Ex tb IIIB T 85°C or T 135°C

DEKRA EXAM GmbH
Bochum, dated 2015-06-11

Signed: Simanski
Certification body

Signed: Dr. Eickhoff
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) **2nd Supplement to the EC-Type Examination Certificate BVS 10 ATEX E 066 X**

(15) 15.1 Subject and type

Junction Box type S47k and
Junction Box type X Serie AL Junction Box

15.2 Description

The junction box consists of an aluminium enclosure and is suitable for use in gas and dust hazardous atmospheres of Categories 2G and 2D.

The junction box type X series AL junction box is equipped as follows: either with conical NPT-connections for the type of protection 'd', Flameproof Enclosure; or with metric connection threads for attaching cable glands separately certified for this purpose for the type of protection 'e', Increased Safety; and / or for attaching the sensor infrared gas monitor type PrimaX IR according to the ATEX Certificate BVS 10 ATEX E 157 X. Only the manufactured variant is marked on the apparatus. The applicable ambient temperature range depends on the cable gland used.

The junction box will be used in conjunction with the sensor infrared gas monitor type PrimaX IR according to the ATEX Certificate BVS 10 ATEX E 157 X.

The junction box can also be used in conjunction with a cable gland type HSK-M-Ex-d for an ambient temperature range from -50 °C to +80 °C.

This supplement is issued to ensure the compliance of the equipment with the updated versions of the applicable standards.

Listing of all components used referring to older standards

Subject and type	Certificate	Standards
Terminal blocks MBK 2,5/E	KEMA 03ATEX2380 U	EN 60079-0:2006 EN 60079-7:2007 EN 50281-1-1:1998 + A1

15.3 Parameters

15.3.1 Electrical parameters

Current (constant power supply)		310	mA
Power	max.	1,92	W

15.3.2 Thermal parameters for junction box

Ambient temperature range with cable gland type HSK-M-Ex-d (NPT and metric thread)	-50 °C ≤ T_a ≤ +40 °C
temperature class	T6
maximum surface temperature	≤ 85 °C
Ambient temperature range with cable gland type HSK-M-Ex-d (NPT and metric thread)	-50 °C ≤ T_a ≤ +80 °C
Temperature class	T4
Maximum surface temperature	≤ 135 °C
Ambient temperature range with cable gland type 8161/5-M25-17	-40 °C ≤ T_a ≤ +40 °C
Temperature class	T6
Maximum surface temperature	≤ 85 °C

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

Ambient temperature range with cable gland type 8161/5-M25-17	-40 °C ≤ T_a ≤ +70 °C
Temperature class	T4
Maximum surface temperature	≤ 135 °C

(16) Test and Assessment Report

BVS PP 10.2154 EG as of 2015-06-11

(17) Special conditions for safe use

The variant designed for an ambient temperature of 80 °C must feature leads for connecting the power supply and the sensor that are suitable for a service temperature of at least 90 °C.

The measuring function for explosion protection is not subject of this Test Report.

For Group III application the apparatus has to be installed in such a way that process-related electrostatic charges, e.g. caused by media passing by, can be excluded.

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, 2015-06-11
BVS-Ew/Mu A 20150056

Certification body

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