1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 05ATEX1285X** Issue: **5**

4 Equipment: **Type KDSU, KOSU and KISU Range of Cable Glands**

5 Applicant: **Weidmüller Interface GmbH & Co. KG**

6 Address: Klingenbergstrasse 16
32758 Detmold
Germany

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

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2012/A11:2013 EN 60079-1:2014 EN 60079-7:2015 EN 60079-31:2014

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

KISU and KDSU

II 2G
Ex db IIC Gb
Ex eb IIC Gb

II 1D
Ex ta IIIC Da

KOSU

II 2G
Ex eb IIC Gb

II 1D
Ex ta IIIC Da

* Due to restrictions applied by the applicant some products that are detailed in this certificate may not be commercially available.

Project Number 0462

Signed:

Title: Director of Operations

CSA Group Netherlands B.V.
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Netherlands

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13 **DESCRIPTION OF EQUIPMENT**

The Type KDSU, KOSU and KISU Range of Cable Glands may be supplied in the size range 16 to 100 with ISO Metric entry threads of M20 to M100 respectively. Alternative thread sizes and forms ISO metric, NPT, NPSM, BSPT, BSPP, PG and ET are available. They are intended for use with an effectively filled and circular armoured, unarmoured, braided or screened cable and comprise the following components:

a. An entry component
b. An elastomeric inner sealing ring
c. A metal inner skid washer
d. A compression nut
e. An armour clamping cone
f. A tapered clamp ring
g. A middle nut
h. An elastomeric outer sealing ring
i. A nylon outer skid washer
j. A back nut

Design options

i. KDSU Only - The use of a brass continuity washer to enable the glands to be used with lead inner sheathed cables. An optional reduced bore outer seal may also be fitted.
ii. KISU Only - Replacement of the middle nut and back nut, outer seal and outer skid washer with an alternative middle cap component.
iii. KOSU Only - Removal of the inner sealing ring and inner skid washer, to permit the glands to be used with armoured, non-lead sheathed cables. An optional reduced bore outer seal may also be fitted.
iv. Marking of KISU and KDSU cable glands IP66 and IP68. The KOSU cable glands are marked IP66.
v. Sealing rings are available in either neoprene or silicone rubber.

Sira Variation 1 - This variation introduced the following changes:

i. To permit the use of KDSU, KOSU and KISU (neoprene) range of cable glands within an operating temperature range of 85°C; this change necessitates the amendment of special condition for safe use clause 15.2.
ii. To allow the use of the KDSU, KOSU and KISU range of cable glands on a revised inner sheath cable range.
iii. To permit the use of the KDSU, KOSU and KISU range of cable glands for installations with an ingress protection rating of IPX8.
iv. To allow the serial/batch number to be removed from the product marking and relocated on the packaging.
v. The introduction of additional minor dimensional and text changes to drawings.
vi. To permit the use of the KDSU, KOSU and KISU range of cable glands with unarmoured, braided or screened cables and the application of a new special condition for safe use clause 15.4.
vii. To allow the removal of seal temperature marking on the seals.

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Sira Variation 2 - This variation introduced the following changes:

i. The introduction of the following new types:
Type KDSU, KOSU and KISU **Cable Glands** – orporating neoprene seals and continuity washer.
Type KDSU, KOSU and KISU **Cable Glands** – orporating neoprene seals
Type KDSU, KOSU and KISU **Cable Glands** – orporating silicone seals
Type KDSU, KOSU and KISU **Cable Glands** – orporating neoprene seals
Type KDSU, KOSU and KISU **Cable Glands** – orporating silicone seals

ii. To permit the KDSU, and KISU Ranges of Cable Glands to be marked IP68; this indicates that they have been tested at a depth up to 25 m for a duration of 30 minutes when fitted into either threaded entries or 'EEx e' enclosures that have plain hole entries with 0.5 mm clearances. The KOSU Cable Glands will be marked IP66.

iii. To allow the use of NBR O-ring interface seals with the KDSU, KOSU and KISU Range of Cable Glands that are fitted with neoprene sealing rings.

iv. To recognise the introduction of minor drawing changes.

v. The Special Conditions For Safe Use clause numbers 15.2 and 15.4 are amended to recognise the new types introduced with this variation.

Sira Variation 3 - This variation introduced the following changes:

i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents originally listed in section 9, EN 50014:1997 (amendments 1 and 2), EN 50018:2000, EN 50019:2000 and EN 50281-1-1:1998, were replaced by those currently listed, the markings in section 12 were updated accordingly and the conditions were modified to recognise the requirements of the latest standards.

ii. Special Condition for Safe Use 15.5 was introduced.

Sira Variation 4 - This variation introduced the following changes:

i. The UK manufacturing site was removed from the certificate.

Sira Variation 5 - This variation introduced the following changes:

i. A clarification to the Type KDSU, KISU,KOSU Cable Glands.

ii. Following appropriate reassessment to demonstrate compliance with the requirements of the latest editions of the EN 60079 series of standards, the documents previously listed in section 9, EN 60079-0:2006, EN 61241-0:2006 and EN 61241-1:2004 were replaced by those currently listed, the markings were updated accordingly, the Special Conditions for Safe Use were also amended.

iii. Type of protection Ex t is upgraded from EPL Db to EPL Da. Following appropriate reassessment to demonstrate compliance with the additional requirements for Ex ta, the markings were updated accordingly.

iv. The introduction of an alternative silicone and neoprene seal material was endorsed.

v. The service temperature range of the glands fitted with a neoprene seal was extended to -35°C to +90°C.

vi. The KDSU and KISU cable glands, when installed in accordance with the manufacturer's instructions and with an appropriate enclosure on which they are fixed, are capable of providing an ingress protection of IP66 and IP68 (50 metres 7 days).

vii. The removal of the special condition for safe use relating to enclosure volume, the remaining conditions are renumbered accordingly.

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Sira Variation 6 - This variation introduced the following changes:

i. To modify/introduce the following changes to type KDSU & KOSU Cable Glands:
- KDSU, gland size 16, revised 'standard' outer seal cable range from: 9.0/13.5 to: 8.4/13.5
- KISU, gland size 16, revised 'standard' outer seal cable range from: 9.0/13.5 to: 8.4/13.5
- KDSU, gland size 20S, revised 'standard' outer seal cable range from: 12.9/16.0 to: 11.5/16.0
- KISU, gland size 20s, revised 'standard' outer seal cable range from: 12.9/16.0 to: 11.5/16.0
- KDSU, gland size 16H was introduced.

ii. The recognition of the 'standard' entry threads associated with every gland type's gland sizes.

iii. To permit all gland types, of parallel threaded entry threads, marked suitable for 'Exe' only to be modified to have a minimum thread length reased to 10 mm from 8 mm.

iv. To permit all gland types of parallel threaded entry threads to be manufactured with a longer than 'standard' thread length to suit the end use application.

v. To permit all gland types to be manufactured with a size larger than the 'standard' entry threads listed within the product description.

vi. The brass materials of manufacture were updated and corrected.

vii. To recognise the actual seal 'material specification' reference as a replacement for the seal 'material supplier'.

viii. To recognise all gland types with the following alternate threaded entry threads complying with the requirements of EN 50018:2000. Are intended to be used as replacement entry devices within existing installations with equipment that have threaded entries no longer permitted by the current edition of EN 60079-1.
- NPSM ANSI/ASME B1.20.1:1983
- BSPT BS21:1985 (ISO 7/1; BS EN 10226-1:2004 'standard threads'
- BSPP BS EN ISO 228-1:2003; BS EN ISO 2228-2:2003 class A full form 'external threads'
- PG DIN 40430:1971
- ET BS 31:1940 (1979) Table 'B'

All alternative trade size thread forms are manufactured within the dimensional parameter of the standard entry threads of the gland entry body, and relevant constructional compliance length and engagement requirements in accordance with their product markings

ix. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2012, EN 60079-1:2007, EN 60079-7:2007 and EN 60079-31:2009, were replaced by EN 60079-0:2012/A11:2013, EN 60079-1:2014, EN 60079-7:2015, and EN 60079-31:2014. The markings were updated, and a Specific Condition of Use was modified and amended to recognise the new standard edition. In addition the description was modified to clarify the certified cable gland types, the standard gland size 'entry threads', and gland size range taking capabilities lusive of changes carried out under this certificate variation.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	12 April 2006	R51A14293A	The release of the prime certificate.

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Issue	Date	Report number	Comment
1	26 June 2009	R51A20139C	This Issue covers the following changes: • All previously issued certification was rationalised into a single certificate, Issue 1, Issue 0 referenced above is only intended to reflect the history of the previous certification and has not been issued as a document in this format. • The rationalisation of the certificate in accordance with that listed in section 14.3.
2	22 March 2012	R27074A/00	The introduction of Sira Variation 4.
3	26 March 2013	R27876A/00	The rationalisation of the certificate in accordance with that listed in section 14.3.
4	04 June 2018	R70144815B	This Variation introduced the following changes: • EC-Type Examination Certificate in accordance with 94/9/EC updated to EU-Type Examination Certificate in accordance with Directive 2014/34/EU. *(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. Variations to such EC-Type Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)]* • The introduction of Sira Variation 6
5	15th October 2019	0462	• Transfer of certificate **Sira 05ATEX1285X** from Sira Certification Service to CSA Group Netherlands B.V..

14.3 Certificate number BAS 01ATEX2271X Issue 10

15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)

15.1 Glands fitted with neoprene sealing rings (black) shall not be used in enclosures where the temperature, at the point of mounting, is outside the range of -35°C to +90°C.

15.2 Glands fitted with silicone sealing rings (white or red) shall not be used in enclosures where the temperature, at the point of mounting, is outside the range of –60°C to +180°C.

15.3 When the gland is used with reased safety and/or dust protected equipment, the entry thread shall be suitably sealed to maintain the ingress protection rating of the associated enclosure.

15.4 If the **KDSU, KISU** and **KOSU** types of cable glands only grip the cable sheath of the cable and do not clamp the cable armour or if they are used to terminate unarmoured, braided or screened cables, then they shall only be used for fixed installations, hence, the cables shall be effectively clamped to prevent pulling or twisting.

15.5 The **KDSU and KISU** cable glands, when installed in accordance with the manufacturer's instructions and with an appropriate enclosure on which they are fixed, are capable of providing an ingress protection of IP66 and IP68 (50 metres 7 days).

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15.6 The **KOSU** range of cable glands, when installed in accordance with the manufacturer's instructions and with an appropriate enclosure on which they are fixed, are capable of providing an ingress protection of IP66.

15.7 The threaded entry component threads without interface O-ring seals installed in an explosive dust atmosphere, within threaded entries, shall only be fitted into enclosures that have either:

- parallel entries that will ensure that a minimum of 5 full threads of contact will be maintained, this is in accordance with clause 5.1.2 of EN 60079-31:2014,
- tapered entries that will ensure that a minimum of 3 ½ full threads of contact will be maintained, this is in accordance with clause 5.1.2 of EN 60079-31:2014

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

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Certificate Annexe

Certificate Number: **Sira 05ATEX1285X**

Equipment: **Type KDSU, KOSU and KISU Range of Cable Glands**

Applicant: **Weidmüller Interface GmbH & Co. KG**

Issue 0

Drawing No.	Sheet	Rev.	Date	Title
WMR/ATX/CRO	1 of 1	1	11 Nov 05	KOSU label drawing
WMR/ATX/CR	1 of 1	1	11 Nov 05	KDSU label drawing
WMR/ATX/CRD	1 of 1	1	11 Nov 05	KISU label drawing

Issue 1

Drawing No.	Sheets	Rev.	Date	Title
WMR/ATX/CR	1 of 1	2	23 Apr 09	Label Drawing KDSU
WMR/ATX/CRD	1 of 1	2	23 Apr 09	Label Drawing KISU
WMR/ATX/CRO	1 of 1	2	23 Apr 09	Label Drawing KOSU

Issue 2 No new drawings were introduced.

Issue 3

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
WMR/ATX/CR	1 to 2	5	26 Mar 13	Trade Agent Label Drawing KDSU
WMR/ATX/CRD	1 to 2	5	26 Mar 13	Trade Agent Label Drawing KISU
WMR/ATX/CRO	1 to 2	5	26 Mar 13	Trade Agent Label Drawing KOSU

Issue 4

Drawing	Sheets	Rev	Date (Sira stamp)	Title
WMR/ATX/CR	1 to 2	6	31 May 2018	KDSU Glands
WMR/ATX/CRO	1 to 2	6	31 May 2018	KOSU Glands
WMR/ATX/CRD	1 of 2	6	01 Jun 2018	KISU Glands

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