



1 **EU-TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 16ATEX1261U** Issue: **2**

4 Component: **Flowpod Sensor adaptor**

5 Applicant: **KEM Küppers Elektromechanik GmbH**

6 Address: Liebigstr. 5
85757 Karlsfeld
GERMANY

7 This component 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 component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of a component 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

10 The sign 'U' is placed after the certificate number to indicate that the product assessed is a component and may be subject to further assessment when incorporated into equipment. Any limitations of use are listed in the schedule to this certificate.

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

12 The marking of the component shall include the following:



II 2 G
Ex db IIC Gb

Project Number 0634

Signed: 

Title: Director of Operations

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CSA Group Netherlands B.V.
Utrechtseweg 310,
6812 AR, Arnhem,
Netherlands



SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

Sira 16ATEX1261U

Issue 2

13 **DESCRIPTION OF COMPONENT**

Type code: SV**-****-***-**-**

SV	*	*	-	**	**	-	**	**	-	**
Sensor type										
Carrier Frequency	T									
Inductive	I									
Sensor design type										
Short sensor adaptor, common sensor tap		K								
Long sensor adaptor, common sensor tap		L								
Short sensor adaptor, small sensor tap		R								
Long sensor adaptor, small sensor tap		S								
Material										
1.4305				05						
1.4404				04						
Sensor design connection										
Sensor hole					A1					
Thread socket short					B1					
Thread socket long					B2					
Connection to electronic device										
3/4" NPT							N1			
Connection to flowmeter										
M14x1.5 6H								M1		
Certification types										
ATEX, IECEX Ex d Gb Certification										EX

The sensor adaptor is the connection between a flowmeter and an Ex d electronic device. A flowmeter can be a gear meter, helical gear meter, turbines or others. An electronic device can be any device as an indicating device like the normally used "Flowpod" or an adaptor box, which encloses additional electronics to evaluate the signals from the sensor coil. The sensor coil can be a carrier frequency or an inductive one. The sensor adaptor consists of three parts, which are mounted together. "SV-XX-AD-XX-XX-AA" is assembled with "SV-XX-AD-XX-XX-SA" via an M12x1.5 6H thread. This assembly is inserted in an "SV-XX-AD-XX-M14-GA-X", there is a cylindrical joint between both parts. Stub screws secure the parts from slipping off each other, these screws are secured by temperature resistant adhesive. The whole assembly is connected to the flowmeter via an M14x1.5 6H/6g thread. The adapter is secured by a counter nut against loosening from the flowmeter.



SCHEDULE

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Issue 2

Operation of the carrier frequency type:

The coil is actively powered by a sinusoidal signal source of the maximum amplitude of 5 Volts at a frequency in the Kilohertz range. If the magnetic field is adopted by a moving part, e.g. gear or a turbine wheel of a flow meter, a shift in oscillator frequency is observed. Consequently, each shift correlates with a certain amount of displaced fluid, whereby the volumetric flow rate is calculated. Oscillator, coil power limitation and evaluation electronics are located outside the sensor adaptor.

Operation for the inductive type:

The inductive type induces a voltage when a gear or a turbine wheel of a flow meter is moving near the sensor. The coil, which is located in the tip of the sensor adaptor, induces a sinusoidal signal in a frequency range from a few Hertz to Kilohertz depending of the flow rate and the flow meter. Each signal oscillation is correlated with a certain amount of displaced fluid, whereby the volumetric flow rate is calculated. The evaluation electronics are located outside the sensor adaptor.

Variation 1 - This variation introduced the following changes:

- i. The depth of the bore hole was reduced.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	25 January 2017	R70080926A	The release of the prime certificate.
1	08 January 2018	R70165456A	The introduction of Variation 1.
3	15th October 2019	0634	Transfer of certificate Sira 16ATEX1261U from Sira Certification Service to CSA Group Netherlands B.V..

15 SCHEDULE OF LIMITATIONS

15.1 The flamepaths shall not be repaired.

15.2 The ambient temperature shall be between the range of $-40\text{ °C} \leq T_a \leq +85\text{ °C}$.

15.3 The maximum input power of sensor adaptor with the carrier frequency coil shall not exceed 0.11 W.

15.4 The maximum output power of the sensor adaptor with the inductive coil shall not exceed 0.36 W.

15.5 CAUTION – USE FASTENERS WITH YIELD STRESS $\geq 450\text{ MPa}$.

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.

Certificate Annexe



Certificate Number: Sira 16ATEX1261U

Component: Flowpod Sensor adaptor

Applicant: KEM Küppers Elektromechanik GmbH

Issue 0

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
16/07.0001	1 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Def. Socket Set Screw
16/06.0011	2 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Def. Line Bushing
16/07.0005	3 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Flameproof Joint CF
16/07.0006	4 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Flameproof Joint IF
16/07.0002	5 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Thread Socket short LFM
16/07.0012	6 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Thread Socket long only
16/07.0013	7 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Thread Socket short only
16/07.0008	8 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Sensor Hole
16/07.0007	9 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Sensor Hole Short CF
16/07.0010	10 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Thread Socket short
16/07.0011	11 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Thread Socket long
16/07.0009	12 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 SV-AA & SV-SA
16/11.0023*	13 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Grounding
16/08.0020	1 of 2	A06	30 Nov 16	SVxx-2813-2813-xx-LA Label drawing

* This drawing number was corrected by Issue 1

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
16/07.0001	1 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Def. Socket Set Screw
16/06.0011	2 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Def. Line Bushing
16/07.0005	3 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Flameproof Joint CF
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16/07.0012	6 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Thread Socket long only
16/07.0013	7 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Thread Socket short only
16/07.0008	8 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Sensor Hole
16/07.0007	9 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Sensor Hole Short CF
16/07.0010	10 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Thread Socket short
16/07.0011	11 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Thread Socket long
16/07.0009	12 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 SV-AA & SV-SA
16/11.0023	13 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Grounding

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