(1) # EC-TYPE EXAMINATION CERTIFICATE

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

(3) EC-Type Examination Certificate Number: **KEMA 05ATEX1075** Issue Number: **2**

(4) Equipment: **Programmable Measurement Converter Model TMP-OSI ... and Model CAP-OSI ...**

(5) Manufacturer: **Ardetem-Sfere**

(6) Address: **Route de Brindas, Parc d'Activité d'Arbora N° 2, 69510 Soucieu en Jarrest, France**

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

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC 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 confidential test report number 212193200-5.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006
EN 61241-0 : 2006
EN 60079-11 : 2007
EN 61241-11 : 2006
EN 60079-26 : 2007

(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 schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment according to the 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 (1) GD **[Ex ia] IIC** and **[Ex iaD]**

This certificate is issued on January 5, 2010 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G.van Es
Certification Manager

PRODUCTS RvAC 001

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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 05ATEX1075** Issue No. **2**

(15) **Description**

Programmable Measurement Converter Model TMP-OSI ... and Model CAP-OSI ... is used to convert a current or voltage into an intrinsically safe current or voltage signal.

The converter is located outside the hazardous area.

Ambient temperature range -10 °C to +60 °C.

Electrical data

Non-intrinsically safe circuits

Supply (terminals A1 and A3):	90 ... 265 Vac or 88 ... 350 Vdc, 20 ... 40 Vac or 20 ... 64 Vdc U_m = 265 Vac
Input (terminals E1, E2, E3 and E4):	100 mA maximum, 300 Vdc maximum U_m = 265 Vac

Intrinsically safe circuit

Output circuit (terminals S1 and S2):
in type of protection intrinsic safety Ex ia IIC respectively Ex iaD, with following maximum values:
U_o = 24,1 V; I_o = 105 mA; P_o = 0,64 W; C_o = 120 nF; L_o = 3 mH.

The intrinsically safe circuit is infallibly galvanically isolated from the non-intrinsically safe circuits up to peak voltage of 375 V.

Installation instructions

The manual provided with the equipment shall be followed in detail to assure safe operation.

(16) **Test Report**

KEMA No. 212193200-5.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 212193200-5.

Test Report No. 212193200-5

Programmable Measurement Converter Model TMP-OSI ... and Model CAP-OSI ...

Laboratory: **KEMA Quality B.V.**
Utrechtseweg 310
6812 AR Arnhem
The Netherlands

By order of: **Ardetem-Sfere**
Route de Brindas,
Parc d'Activité d'Arbora N° 2
69510 Soucieu en Jarrest
France

Author	: E. Giusti	2009-11-21	Reviewer	: C.G. van Es	2010-01-04
KEMA project no.	: 212193200				

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Contents

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1 KEMA project no. 208336300:

1.1 Standards applied

Samples of the equipment as described under (1.2) below were subjected to the requirements and tests of the following standards:

EN 50014 : 1997 + A1, A2
EN 50020 : 2002
EN 50284 : 1999

Following standards were used as a guide:

IEC 61241-0 : 2004
draft IEC 61241-11 : 2004

The assessment of the equipment was conducted from April 12 to June 9, 2005.

1.2 Description of the equipment

Programmable Measurement Converter Model TMP-OSI ... is used to convert a current or voltage into a current or voltage signal.

The converter is locate outside the hazardous area.

Ambient temperature range -10 °C to +60 °C.

Electrical data

Non-intrinsically safe circuits

Supply (terminals A1 and A3):	90 ... 265 Vac or 88 ... 350 Vdc, 20 ... 40 Vac or 20 ... 64 Vdc U_m = 265 Vac
Input (terminals E1, E2, E3 and E4):	100 mA maximum, 300 Vdc maximum U_m = 265 Vac

Intrinsically safe circuit

Output circuit (terminals S1 and S2):
in type of protection intrinsic safety EEx ia IIC, with following maximum values:
U_o = 24,1 V; I_o = 105 mA; P_o = 0,64 W; C_o = 120 nF; L_o = 3 mH.

The intrinsically safe circuit is infallibly galvanically isolated from the non-intrinsically safe circuits up to peak voltage of 375 V.

1.3 Marking of the equipment

II (1) GD [EEx ia] IIC

1.4 Test documentation

			dated
1.	Description, rev. A (10 pages)		07.03.2005
2.	Drawing No.	Tmp-OSI-3, rev. A (diagram, 3 sheets)	22.03.2005
		E16-SI-HTF, rev. F (4 sheets)	07.12.2004
		E16-SI-BTF, rev. F (4 sheets)	07.12.2004
		Tmp-OSI-3 (pcb, 3 sheets)	22.03.2005
3.	Parts list No.	TMP-OSI (3 pages)	23.03.2005

2 KEMA project no. 212193200:

2.1 Standards applied

EN 60079-0: 2006
EN 60079-11: 2007
EN 60079-26: 2007
EN 61241-0: 2006
EN 61241-11: 2006

The assessment was conducted from November 26, 2008 to November 21, 2009.

2.2 Description of changes

The following changes have been assessed:
- Modification of the name of the company into Ardetem-Sfere;
- addition of Programmable Measurement Converters Model CAP-OSI ... with identical construction and electrical data and previously manufactured by Sfere;
- compliance of the equipment with the EN 60079 and EN 61241 series standards;
- the intrinsically safe circuits are also suitable for type of protection Ex iaD, with application of the same parameters.

2.3 Marking of the equipment

II (1) GD [Ex ia] IIC and [Ex iaD]

2.4 Test documentation

	dated
Notice Descriptive du TMP-OSI... / CAP-OSI..., rev. B (10 pages)	2008-10-27

3 Routine tests

Each transformer shall be subjected to an electric strength test according to EN 60079-11, clause 11.2, between the primary windings and the windings supplying the intrinsically safe circuits, using a voltage of 2500 Vac during one minute, without breakdown.

4 Instructions for installation and use

The manual provided with the equipment shall be followed in detail to assure safe operation.

5 Test results

The detailed test results are laid down in confidential files no. 208336300, 208337100 and 212193200. There were no deviations from, additions to or exclusions from the applicable test methods as described in the standards mentioned under 1.1 and 2.1. Where applicable, the estimated uncertainty of measurement meets the requirements of IECEx Operational Document OD012.

6 Conclusion

The equipment as described under 1.2 and 2.2 meet all applicable requirements of the standards as mentioned under 1.1 and 2.1. Continued certification of the equipment is therefore recommended.

Author:

E. Giusti

Reviewer:

C.G. van Es

Endorsed on January 5, 2010 by:

C.G. van Es
Certification Manager

END OF TEST REPORT