

CERTIFICATE

(1) Type Examination

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

(3) Type Examination Certificate Number: **KEMA 03ATEX1070**

Issue Number: **5**

(4) Equipment: **Load Cell Model 0743, 0743-SBK and 0745A**

(5) Manufacturer: **Mettler-Toledo Inc.**

(6) Address: **1900 Polaris Parkway, Columbus, OH 43240, U.S.A.**

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

(8) DEKRA Certification B.V., 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 no. 212601700/2.

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

EN 60079-0 : 2012
EN 60079-15 : 2010

EN 60079-11 : 2012
EN 60079-31 : 2009

(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 Type Examination Certificate relates only to the design, examination and tests of the specified equipment and not to the manufacturing process and supply of this equipment.

(12) The marking of the equipment shall include the following:



II 3 G Ex ic IIC T4 Gc or
II 3 G Ex nA IIC T4 Gc or
II 3 D Ex tc IIIC T100 °C Dc

This certificate is issued on 25 June 2013 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.

DEKRA Certification B.V.

R. Schuller
Certification Manager

(13) **SCHEDULE**

(14) **to Type Examination Certificate KEMA 03ATEX1070**

Issue No. 5

(15) **Description**

The load cells Model 0743, 0743-SBK and 0745A convert a mass force into an electrical signal.

The load cells are provided with a permanently connected cable of maximum 30 m length.
The circuits of each load cell are considered as one intrinsically safe circuit.

Ambient temperature range -40 °C to +50 °C.

The specified temperature T100 °C, for applications in explosive atmospheres caused by air/dust mixtures, is based upon an ambient temperature of 50 °C and a dust layer of maximum 5 mm thickness.

The enclosure provides a degree of protection of at least IP6X as per EN 60529.

Electrical data

Signal and supply circuits:

In type of protection intrinsic safety Ex ic IIC, only for connection to certified intrinsically safe circuits, with the following maximum total values (circuits combined):

$U_i = 25 \text{ V}$; $I_i = 600 \text{ mA}$; $P_i = 1,25 \text{ W}$; $C_i = 5 \text{ nF}$ (= 2 nF for Model 0743-SBK); $L_i = 30 \text{ }\mu\text{H}$ (= 6 μH for Model 0743-SBK)

or

in type of protection Ex nA or Ex tc:

$U_n = 25 \text{ V}$.

Installation instructions

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

(16)

Test Report

No. 212601700/2.

(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. 212601700/2.

Test Report No. 212601700/2

**Load Cell Model 0743, 0743-SKB and
0745A**

Laboratory: **DEKRA Certification B.V.**
Utrechtseweg 310
6812 AR Arnhem
The Netherlands

By order of: **Mettler-Toledo**
1900 Polaris Parkway
Columbus OH 43240
U.S.A.

Author	: P. Cvetanović	2013-06-25	Reviewer	: R. Schuller	2013-06-25
Project no	: 216384900				

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This Test Report contains the test results related to the sample(s) tested. The tests results cannot be used for any statement related to the quality of the equipment from running production.

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1 Project no. 202691800:

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 50021 : 1999
EN 50281-1-1 : 1998

The assessment was conducted from February 2003 to May 2003 and in February 2007.

1.2 Description of the equipment

The load cells Model 0743 and Model 0745A convert a mass force into an electrical signal.

The load cells are provided with a permanently connected cable of maximum 30 m length. The circuits of each load cell are considered as one intrinsically safe circuit.

Ambient temperature range -40 °C ... +50 °C.

The specified temperature T 175 °C, for applications in explosive atmospheres caused by air/dust mixtures, are based upon an ambient temperature of 50 °C.

Electrical data

Signal and supply circuits:

In type of protection energy limitation EEx nL IIC, only for connection to an energy limited circuit, with the following maximum total values under normal operating conditions:

$U_i = 25 \text{ V}$; $I_i = 600 \text{ mA}$; $P_i = 1,25 \text{ W}$; $C_i = 5 \text{ nF}$; $L_i = 30 \text{ }\mu\text{H}$.

1.3 Marking of the equipment



II 3 GD EEx nL IIC T4 T 135 °C or
II 3 GD EEx nA T4 T 135 °C

1.4 Test documentation

	<u>dated/signed</u>
Document no. 117439, Rev. 13	24.04.2003
13929800A, Rev. 2	24.04.2003
14951900A, Rev. 2	24.04.2003
15129300A, Rev. 12	24.04.2003
15131000A, Rev. 6	24.04.2003
15131400A, Rev. 9	24.04.2003
15131800A, Rev. 7	24.04.2003
15238600A, Rev. 2	24.04.2003
15238700A, Rev. 6	24.04.2003
15297100A, Rev. 2	24.04.2003
15297200A, Rev. 6	24.04.2003
15297300A, Rev. 11	24.04.2003

15297600A, Rev. 6	24.04.2003
15297700A, Rev. 11	24.04.2003
15297800A, Rev. 11	24.04.2003
15298200A, Rev. 11	24.04.2003
15311400A, Rev. 2	24.04.2003
153115R, Rev. 1	24.04.2003
15350300A, Rev. 2	24.04.2003
15355500A, Rev. 11	24.04.2003
15357400A, Rev. 11	24.04.2003
15357500A, Rev. 11	24.04.2003
15357900A, Rev. 2	24.04.2003
15402100A, Rev. 9	24.04.2003
15408800A, Rev. 8	24.04.2003
15409500A, Rev. 7	24.04.2003
15409600A, Rev. 7	24.04.2003
15410100A, Rev. 7	24.04.2003
15495200A, Rev. 6	24.04.2003
15530900A, Rev. 8	24.04.2003
15531000A, Rev. 8	24.04.2003
15545600A, Rev. 7	24.04.2003
15545700A, Rev. 7	24.04.2003
15548200A, Rev. 6	24.04.2003
15548300A, Rev. 6	24.04.2003
15879600A, Rev. 5	24.04.2003
15879700A, Rev. 5	24.04.2003
15879800A, Rev. 5	24.04.2003
16584500A, Rev. 0	24.04.2003
16584600A, Rev. 1	24.04.2003
16589400A, Rev. 1	24.04.2003
16589500A, Rev. 1	24.04.2003
16589600A, Rev. 1	24.04.2003
16589700A, Rev. 1	24.04.2003
16589800A, Rev. 0	24.04.2003
16589900A, Rev. 0	24.04.2003
16590000A, Rev. 0	24.04.2003
16590100A, Rev. 0	24.04.2003
A11597600A, Rev. 4	24.04.2003
A13764300A, Rev. 2	24.04.2003
A14318000A, Rev. 2	24.04.2003
D15443400A, Rev. 0	24.04.2003

Per modification without amendment (editorial and minor constructional changes):

117439, Rev. 15	21.12.2006
15297300A, Rev. 13	21.12.2006
15297700A, Rev. 13	21.12.2006
15297800A, Rev. 13	21.12.2006
15357500A, Rev. 13	21.12.2006
A13764300A, Rev. 3	21.12.2006
A15129300A, Rev. 0	21.12.2006
A15131000A, Rev. 0	21.12.2006
A15131400A, Rev. 0	21.12.2006
A15131800A, Rev. 0	21.12.2006
A15410100A, Rev. 0	21.12.2006
A15879600A, Rev. 0	21.12.2006

A15879700A, Rev. 0	21.12.2006
A15879800A, Rev. 0	21.12.2006
A16584500A, Rev. 0	21.12.2006
A16584600A, Rev. 0	21.12.2006
A16589400A, Rev. 0	21.12.2006
A16589500A, Rev. 0	21.12.2006
A16589600A, Rev. 0	21.12.2006
A16589700A, Rev. 0	21.12.2006
A16589800A, Rev. 0	21.12.2006
A16589900A, Rev. 0	21.12.2006
A16590000A, Rev. 0	21.12.2006
A16590100A, Rev. 0	21.12.2006
A17361500A, Rev. 0	21.12.2006

2 Project no. 211391500:

2.1 Standards applied

EN 60079-0 : 2006
EN 60079-15 : 2005
EN 50281-1-1 : 1998 + A1

The assessment was conducted from May to June 2008.

2.2 Description of changes

The following changes have been assessed:

- Addition of Model 0743-SBK
- Editorial changes of prior approved documentation

The specified temperature T 175 °C, for applications in explosive atmospheres caused by air/dust mixtures, are based upon an ambient temperature of 50 °C and a dust layer of maximum 5 mm thick.

Electrical data

Signal and supply circuits:

In type of protection energy limitation Ex nL IIC, only for connection to an energy limited circuit, with the following maximum total values under normal operating conditions (circuits combined):
 $U_i = 25 \text{ V}$; $I_i = 600 \text{ mA}$; $P_i = 1,25 \text{ W}$; $C_i = 5 \text{ nF}$ (= 2 nF for Model 0743-SBK); $L_i = 30 \text{ } \mu\text{H}$ (= 6 μH for Model 0743-SBK).

2.3 Marking of the equipment



II 3 G Ex nL IIC T4
II 3 D IP6X T 135 °C

2.4 Test documentation

	<u>signed/dated *)</u>
Document no. 100140A, Rev. -	2007-11-11
15297300A, Rev. 14	11/06
15297700A, Rev. 14	11/06
15297800A, Rev. 14	11/06
15357500A, Rev. 14	11/06
17498700A, Rev. 1	3/08
17498800A, Rev. -	2008-03-06
72219333A, Rev. -	2008-03-21
72219405A, Rev. -	2008-03-06
72219425A, Rev. -	2008-3-06
72219428A, Rev. -	2008-03-03
A13764300A, Rev. 3	3/04
A14318000A, Rev. 3	01/08
A15879700A, Rev. 1	12/07
E15443400A, Rev. 0	07/08

*) Date as indicated on the document

3 Project no. 211914200:

3.1 Standards applied

EN 60079-0 : 2006
EN 60079-15 : 2005
EN 61241-0 : 2006
EN 61241-1 : 2004

The assessment was conducted from August 2008 to March 2009.

3.2 Description of changes

The following changes have been assessed:

- Load cells have been assessed according to standards EN 61241-0 : 2006 and EN 61241-1 : 2004
- Load cells have been assessed for a maximum surface temperature of 100 °C

The specified temperature T100 °C, for applications in explosive atmospheres caused by air/dust mixtures, are based upon an ambient temperature of 50 °C and a dust layer of maximum 5 mm thickness.

Electrical data

Signal and supply circuits:

In type of protection energy limitation Ex nL IIC, only for connection to an energy limited circuit, with the following maximum total values under normal operating conditions (circuits combined):
 $U_i = 25 \text{ V}$; $I_i = 600 \text{ mA}$; $P_i = 1,25 \text{ W}$; $C_i = 5 \text{ nF}$ (= 2 nF for Model 0743-SBK); $L_i = 30 \text{ } \mu\text{H}$ (= 6 μH for Model 0743-SBK)

or

if used in type of protection Ex nA or Ex tD:
25 V.

3.3 Marking of the equipment



II 3 G Ex nA II T4 or
II 3 G Ex nL IIC T4 or
II 3 D Ex tD A22 IP 6X T100 °C

3.4 Test documentation

	<u>dated</u>
Document no.	
14951900A, Rev.3	02.2008
15238700A, Rev.7	02.2008
15297600A, Rev.7	02.2008
15495200A, Rev.7	02.2008
A15129300A, Rev.1	02.2008
A15131000A, Rev.1	02.2008
A15131400A, Rev.1	02.2008
A15131800A, Rev.1	02.2008
A15410100A, Rev.1	02.2008
A15879600A, Rev.1	02.2008
A15879700A, Rev.1	12.2007
A15879800A, Rev.1	02.2008
A16584500A, Rev.1	02.2008
A16584600A, Rev.1	02.2008
A16589400A, Rev.1	02.2008
A16589500A, Rev.1	02.2008
A16589600A, Rev.1	02.2008
A16589700A, Rev.1	02.2008
A16589800A, Rev.1	02.2008
A16589900A, Rev.1	02.2008
A16590000A, Rev.1	02.2008
A16590100A, Rev.1	02.2008
A17361500A, Rev.1	02.2008
15297200A, Rev.7	02.2008
15297300A, Rev.17	01.2009
15297700A, Rev.17	01.2009
15297800A, Rev.17	01.2009
15357500A, Rev.17	01.2009
F15443400A, Rev.0	12.2008
A11597600A, Rev.5	02.2008
16792100A, Rev.3 Instalation instruction (3 sheets)	02.2009

4 Project no. 212601700:

4.1 Standards applied

Unchanged.

The assessment was conducted from May to June 2009.

4.2 Description of changes

The following changes have been assessed:

- Load cell model 0745A has been altered

Electrical data

Unchanged.

4.3 Marking of the equipment

Unchanged.

4.4 Test documentation

	<u>dated</u>
Document no. 42111368, Rev.0	06.2009
ME-42111327, Rev.0	06.2009
ME-42111338, Rev.0	06.2009
ME-42111348, Rev.0	06.2009
ME-42111381, Rev.0	06.2009
ME-42111385, Rev.0	06.2009
ME-42111389, Rev.0	06.2009
ME-42111201, Rev.0	06.2009
ME-42111202, Rev.0	06.2009
ME-42111203, Rev.0	06.2009
ME-42111204, Rev.0	06.2009
ME-42111205, Rev.0	06.2009
ME-42111206, Rev.0	06.2009
ME-42111221, Rev.0	06.2009
ME-42111222, Rev.0	06.2009
ME-42111223, Rev.0	06.2009
ME-42111224, Rev.0	06.2009
ME-42111225, Rev.0	06.2009
ME-42111226, Rev.0	06.2009
ME-42111241, Rev.0	06.2009
ME-42111242, Rev.0	06.2009
ME-42111243, Rev.0	06.2009
ME-42111244, Rev.0	06.2009
ME-42111245, Rev.0	06.2009
ME-42111246, Rev.0	06.2009
ME-42111320, Rev.0	06.2009
ME-42111332, Rev.0	06.2009
ME-42111342, Rev.0	06.2009
XA-42111301, Rev.0	06.2009
XA-42111302, Rev.0	06.2009
XA-42111303, Rev.0	06.2009
141621R, Rev.2 (2 sheets)	05.2005
42111394, Rev.0	06.2009
15968100A, Rev.2	10.2002
ME-42111367, Rev.0	06.2009
ME-42111373, Rev.0 (6 sheets)	06.2009

ME-42111312, Rev.0 (2 sheets)	07.2009
141591R, Rev.4 (2 sheets)	05.2005
16584200A, Rev.0	07.2002
ME-42111304, Rev.0	06.2009
ME-42111306, Rev.0	06.2009
XA-42111307, Rev.0	06.2009
ME-42111359, Rev.0	06.2009
ME-42111360, Rev.0	06.2009
ME-42111361, Rev.0	06.2009
ME-42111376, Rev.0	06.2009
130934, Rev.18 (5 sheets)	04.2006
ME-42111305, Rev.0	06.2009
ME-42111315, Rev.0	06.2009
ME-42111316, Rev.0	06.2009
42111317, Rev.0	06.2009
ME-42111353, Rev.0	06.2009
ME-42111354, Rev.0	06.2009

5 Project no. 216384900:

5.1 Standards applied

EN 60079-0 : 2009
EN 60079-0 : 2012
EN 60079-11 : 2012
EN 60079-15 : 2010
EN 60079-31 : 2009

The assessment was conducted in June 2013.

5.2 Description of changes

The following changes have been assessed:

- Product evaluated according to standards stated in 5.1

5.3 Marking of the equipment



II 3 G Ex ic IIC T4 Gc or
II 3 G Ex nA IIC T4 Gc or
II 3 D Ex tc IIC T100 °C Dc

5.4 Test documentation

		<u>dated</u>
Document no.	30069949, Rev. 1.0 (10 sheets)	18.05.2013
	30090841, Rev. -	05.2013
	F15443400A\72999860A, Rev.1	05.2013
	ME-42111312, Rev. 1 (2 sheets)	25.06
	15238700A, Rev. 7	02.2008
	15297200A, Rev. 7	02.2008
	15297600A, Rev. 7	02.2008
	15311400, Rev. -	19.04.2013
	15495200A, Rev. 7	02.2008
	16584200A, Rev. 0	7.02
	30070080, Rev. -	18.02.2012
	ME-42111304, Rev. A	06.2009
	ME-42111305, Rev. 1	06.2010
	A11597600A, Rev. -	19.04.2013
	A14318000A, Rev. 5 (3 sheets)	04.12
	A15130900A, Rev. 2	03.10
	100195A, Rev. -	22.08.2007
	100179A, Rev. -	22.08.2007
	118567A, Rev. -	22.08.2007
	115958, Rev. -	19.04.2013
Instructions	42111367B, Rev. B	06.2013

6 Routine tests

The following routine tests and verifications apply to the equipment and shall be carried out by the manufacturer to ensure that the equipment produced complies with the requirements of the standards used for the examination and testing. The routine tests shall be carried out according to the following procedures / documents:

A dielectric strength test, in accordance with EN 60079-11 Clause 11.2, shall be conducted on each unit between the signal/supply circuits and the base of the unit using a test voltage of 500 Vac during one minute or 600 Vac during 1 s.

7 Instructions for installation and use

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

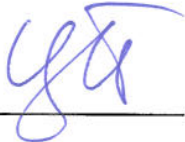
8 Test results

The detailed test results are laid down in confidential files no. 202691800, 211391500, 211914200, 212601700 and 216384900. There were no deviations from, additions to or exclusions from the applicable test methods as described in the standards mentioned above. Where applicable, the estimated uncertainty of measurement meets the requirements of IECEx Operational Document OD012.

9 Conclusion

The equipment as described above meets all applicable requirements of the standards as mentioned above. Continued certification of the equipment is therefore recommended.

Author:



P. Cvetanović

Reviewer:



R. Schuller

Endorsed on 25 June 2013 by:



R. Schuller
Certification Manager

END OF TEST REPORT